A Demographic and Economic Analysis of the

City of Hoover, Alabama

By:

Arthur W. Allaway, Ph.D.
Catherine Suzanna Allaway, M.A.

June 13, 2018

Contents

Executive Summary

Since its incorporation in 1967, the City of Hoover has been recognized for its high quality of life, rapid residential growth, excellent schools, and very successful retailing and services-centered economy. However, with a series of recent high-visibility retail failures nationally and serious debates about the future of traditional bricks-and-mortar retailing itself, Hoover must seriously consider its future as an economic entity and make plans to maintain its vitality over the next several decades.

Population

Hoover's growth and economic development over the past thirty years has far outstripped that of the Metro Area, the State of Alabama, and the U.S. as a whole. The median household income and the percent of Hoover households earning over $200,000 per year are far above those of the metro area, the State of Alabama, and that of the nation as a whole. And Hoover is home to a very highly educated population compared to the metro area, the state, and the nation.

Hoover's population is very significantly skewed toward professional careers. Nearly 55% of Hoover's employed population is employed in managerial, business, and financial occupations or professional and related occupations. However, these professional and managerial jobs do not necessarily exist in Hoover itself. Compared to the metro area, state, and nation, a smaller percent of Hoover employees travel less than 15 minutes to their jobs and a significantly larger percent must drive between 15 and 29 minutes to work.

When compared with Birmingham and Hoover's surrounding cities, Hoover's population is growing faster than all but Helena and Pelham, and Hoover's population is wealthier, more educated, and more managerially employed but than all but Mountain Brook and Vestavia Hills. However, only Helena's and Pelham's employees must drive further to their jobs.

Interestingly, Hoover has one of the smallest percentages among its surrounding cities of residents who are employed in Professional, Scientific, or Technical Services careers, more than only Pelham, Birmingham, and Bessemer and less than half of that of Mountain Brook. And with the economy being increasingly driven by science and technology, the relatively small percentage of Hoover residents involved in science-oriented careers is potentially problematic.

Economy

Retail trade has played a significant role in Hoover's economy historically. Total retail revenue declined slightly from 2007 to 2012, but has rebounded since then, with 2017's figures 7.5 percent higher than 2007's revenue and 8.7 percent higher than 2012. However, this growth is still less than the rate of inflation, which has been calculated by the Bureau of Labor Statistics (across the entire US economy) at 18 percent between 2007 and 2017. Retail employment grew from 2002 to 2007 but declined between 2007 and 2012.

Outside of Retail Trade, the economy of Hoover is comprised of several basic sectors, including Wholesale Trade, Information Providers, Real Estate Sales and Leasing, Professional-Scientific-Technical Services, Administrative Services, Educational Services, Health Care and Social Services, Arts-Entertainment-Recreation Services, and Accommodation and Food Services.

- Compared to Birmingham and Hoover's surrounding cities, the city is second only to Birmingham and Pelham in revenue per resident from Retail Trade and Wholesale Trade.
- Hoover is fourth in revenue generated per resident from Real Estate Sales and Leasing behind Vestavia Hills, Pelham, and Mountain Brook.
- Hoover falls in the middle of the group of surrounding cities in terms of revenue produced per resident by Administrative Services firms.
- Hoover is slightly below the middle of the pack in terms of Accommodation and Food Services, leading only Birmingham, Vestavia Hills, and Helena in revenue generated per resident.
- Hoover leads only Homewood, Bessemer, and Helena in terms of revenue generated per resident by Art, Entertainment, and Recreation firms. Mountain Brook appears to stand head and shoulders above all cities in revenue per resident generated from those industries.
- Hoover trails all of its surrounding cities except Pelham and Helena in terms of Health Care and Social Services revenue per resident.
- Hoover trails all of its surrounding cities except Helena and Bessemer per resident in the number of firms engaged in Professional, Scientific, and Technical Services.

Hoover's Subareas

With many of Hoover's older neighborhood groupings landlocked and reaching development capacity, population growth since 2000 has largely occurred in the northeastern and western / southwestern subareas, with growth since 2010 concentrated in the Ross Bridge, Trace Crossings, and Greystone areas.

Future growth areas where housing increases have been approved but not yet been extensively built as of 2017 are Trace Crossings and South Shades Crest. Significant other growth is approved near US280 in Inverness and Greystone to the northeast and in the Preserve and Grove areas to the northwest.

With most of Hoover's subareas facing small population increases over the next several years, it can be assumed that the existing retail offerings in those subareas are sufficient to satisfy the needs of residents for typical goods and services. Even with significant growth still expected in neighborhoods along US 280, the overabundance of retail and service offerings along that highway should more than satisfy demand.

There is still an opportunity for existing retail in the Northwest (Deer Valley, Lake Cyrus, Preserve, Grove, and Ross Bridge) subarea, especially in the Grove Shopping Center which provides access to these neighborhoods.

While the Bluff Park, Carisbrook, Green Valley, and Shades Cliff areas theoretically can access the Grove, US 31 shopping areas, and Galleria / Patton Creek shopping areas, the road networks to do so are often crowded and uninviting. There is a very large existing marketplace for goods and services in the area that would certainly appreciate entrepreneurial efforts to serve them.

The largest need for new retail offerings will obviously be for the thousands of expected residents in the new areas of Trace Crossings and along South Shades Crest. The future neighborhoods and expansions to existing neighborhoods in these areas will require a retail and services mix that will be more than double what exists today.

The Future of Hoover Retail

According to dozens of sources, malls such as those that have provided Hoover with much of its tax base over the past thirty years are dinosaurs. Hundreds of malls and thousands of mall-based stores have shuttered in the past two decades, and many more may close in coming years. However, shopping centers command two of the most important assets of the future: location and size. Dozens, perhaps hundreds of new innovative uses of shopping center space can take advantage of the locations and sizes of current shopping centers.

To be successful over the long term, it is critical that shopping centers and malls become more than a collection of stores. Aging retail centers are being adapted to offer consumers an attractive, integrated community in which to live, work and shop.

To sustain retail activity, shopping centers are being re-imagined to feature housing, cultural amenities and a variety of commercial uses, all within a walkable, 24/7 environment.

Hoover Economic Development Opportunities

Hoover's current economy has one of the smallest economic contributions per resident from Professional, Scientific, and Technical Service industries of its surrounding cities and smallest percent of its work force employed in Professional, Scientific, and Technical Services. In addition, Hoover's employees commute long distances compared to similar surrounding cities. Also, Hoover has a significant area along Riverchase Parkway West of office park spaces with room for expansion. Finally, Hoover has a large number of shopping centers, some of which have questionable futures.

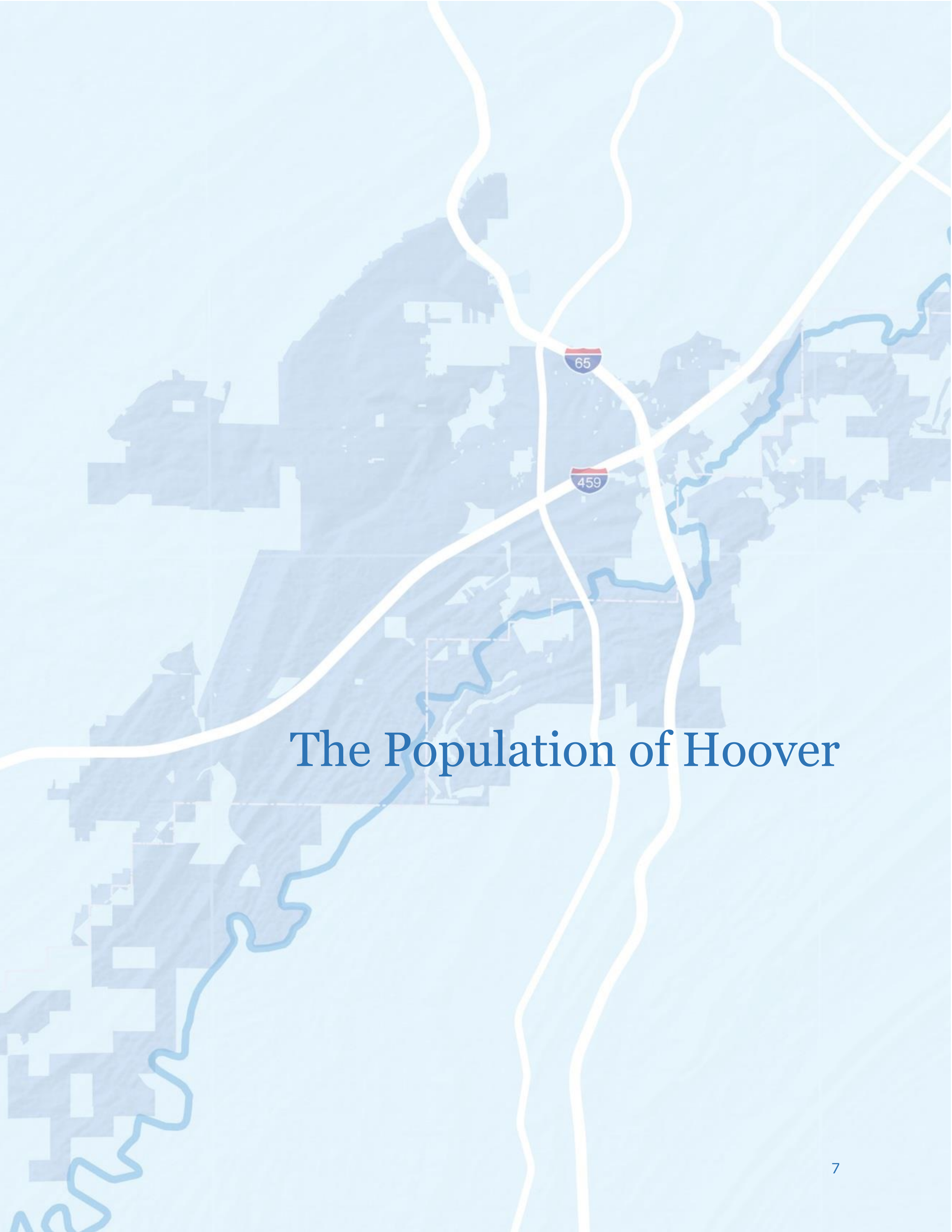
An excellent opportunity exists to improve on all of these is through concentrating the city's economic development efforts toward both recruiting and growing an "Industry 4.0" environment in Hoover. Industry 4.0 is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. Manufacturing facilities of the future will be high-tech, smaller, smarter, and cleaner than ever before, and would be a prefect addition to Hoover given its educated population. Industry 4.0 is marked by emerging technology breakthroughs in a number of fields, including robotics, artificial intelligence, nanotechnology, quantum computing, biotechnology, The Internet of Things, 3D printing and autonomous vehicles.

If Hoover can enhance its capabilities by recruiting firms, birthing firms, and growing its own "Industry 4.0" economy, a large number of current and future high-technology, highly educated commuters would work within the city limits and be likely to seek housing there. In addition, manufacturing jobs generate a multiplier of economic impact (US Bureau of Economic Analysis) several times that of retail or services jobs. The development of a high-technology business incubator in Hoover with significant amenities could begin the attraction of a variety of firms in these soon-to-be-exploding industries.

McKinsey & Company estimates that the Internet of Things (IoT) has a total potential economic impact of $3.9 trillion to $11.1 trillion a year by 2025. At the top end, that level of value—including the consumer surplus—would be equivalent to about 11 percent of the world economy.

Hoover certainly has the amenities, schools, housing, and location to attract and support the population who would be employed in those high-technology fields.

Note: Data used in this study are derived from the US Census and other official government sources. Consumer Expenditure data are derived from the US Bureau of Labor Statistics annual analysis. Easy Analytic Software, Inc. (EASI) is the source of updated estimates except where City of Hoover Housing Authority and Hoover Tax Revenue data are the basis for analysis and projections. Other sources are noted when used.



The Population of Hoover

Introduction to Hoover, Alabama

Since its incorporation in 1967, the City of Hoover has been recognized for its high quality of life, rapid residential growth, excellent schools, and very successful retailing and services-centered economy. Since the opening of the Riverchase Galleria in 1986, Hoover has served as one of the premier retailing centers for the Birmingham-Hoover Metropolitan area and for Central Alabama in general. However, with a series of recent high-visibility retail failures nationally and serious debates about the future of traditional bricks-and-mortar retailing itself, Hoover must think about its future as an economic entity. Retail trade will certainly continue be one of Hoover's strengths, but Hoover needs to have the foresight to consider fostering a future economic mix that most benefits its population in the long term. This economic mix should include considerations of future housing, professional and scientific business services, retailing, and potentially even manufacturing in a world where production facilities have become smaller, cleaner, and infused with high technology.

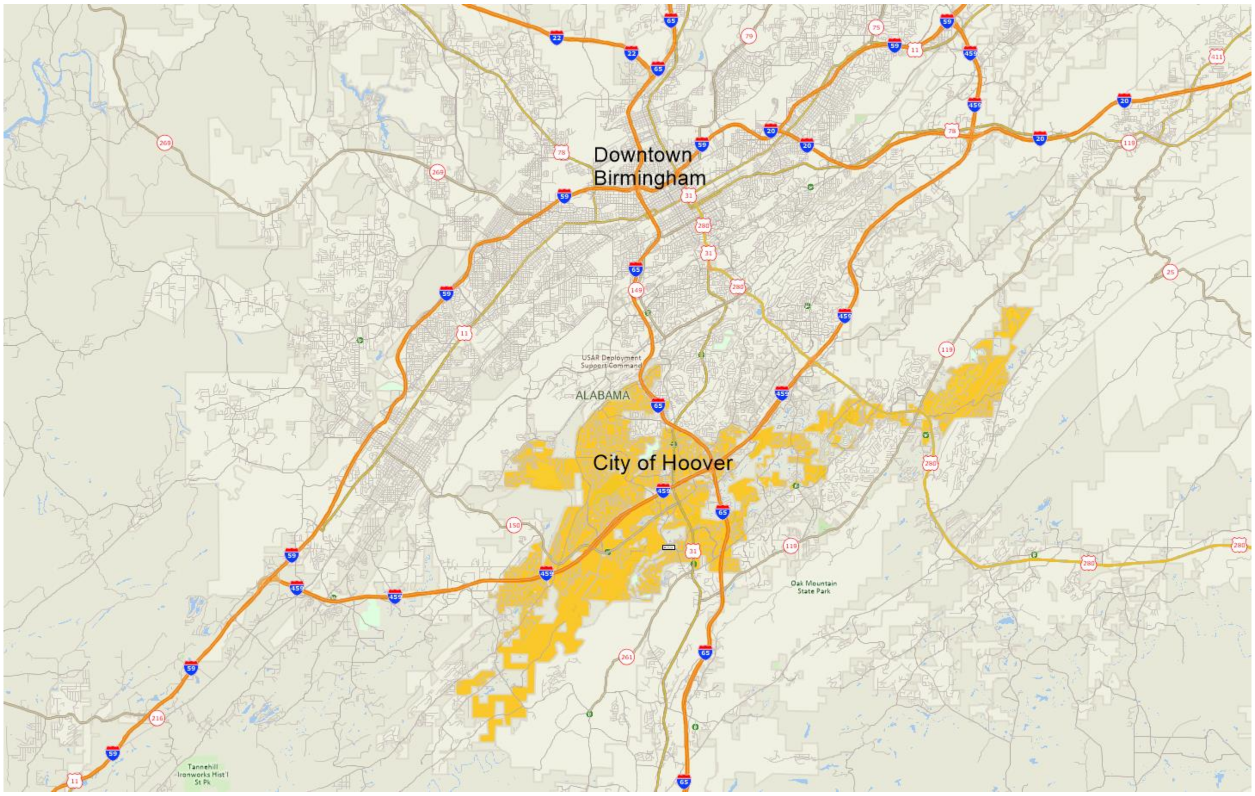
This analysis of Hoover's population and economy is designed to serve as a starting point for a comprehensive plan for the City which will be the basis for actions to insure the sustainability and livability of the City over the next several decades.

Hoover's Population in 2017

Estimating Hoover's population at the end of 2017 begins at the 2010 Census of Population and Housing. According to the Census, Hoover's 2010 population was 81,619, up from 62,994 in 2000 and 43,562 in 1990. Since 2010, Hoover has added 2,858 housing units and an estimated 6,579 residents, bringing Hoover's estimated end-of-year population to 87,496 (see Appendix 1 for methodology).

Population	*Number of Residents*	*Percent Growth*
1990 Census	43,562	
2000 Census	62,994	44.61%
2010 Census	81,619	29.57%
*2017 Estimate (91.6% Occupancy on new construction)**	87,496	7.20%
2017 Estimate (95% Occupancy on new construction)	88,442	8.36%

** 91.6 % Occupancy is the official 2010 Census figure*



Location of the City of Hoover within the Birmingham-Hoover Metro Area

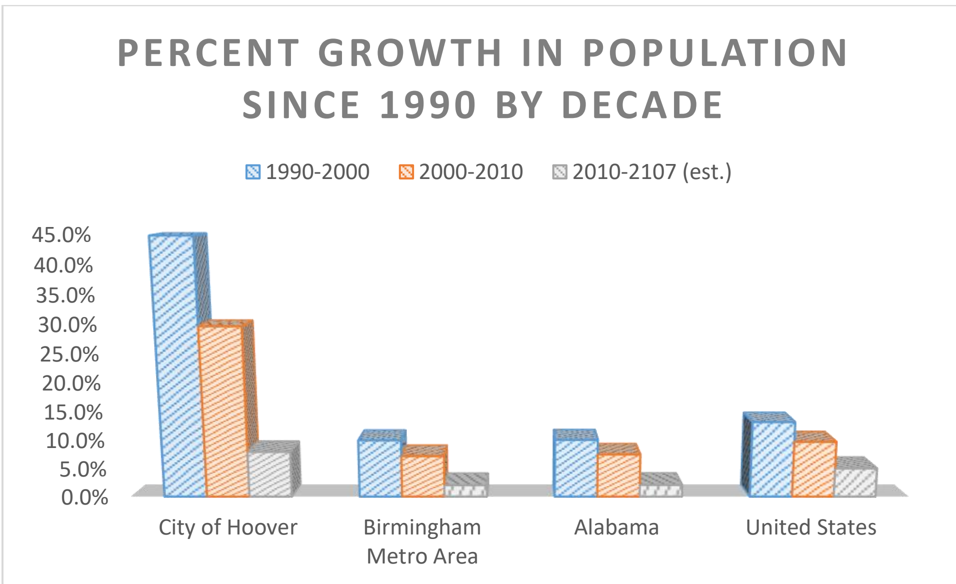
Demographic Profile

Hoover compared to the Birmingham-Hoover Metro Area, Alabama, and the United States

The graphs and tables below show a number of important characteristics of Hoover compared to the Birmingham-Hoover Metro Area, the State of Alabama, and the U.S. as a whole.

Hoover has been one of the fastest growing cities in the nation over the last thirty years. As shown below, its growth in percentage terms has far outstripped that of the metro area, the State of Alabama, and the U.S. as a whole.

Population Growth 1990-2017

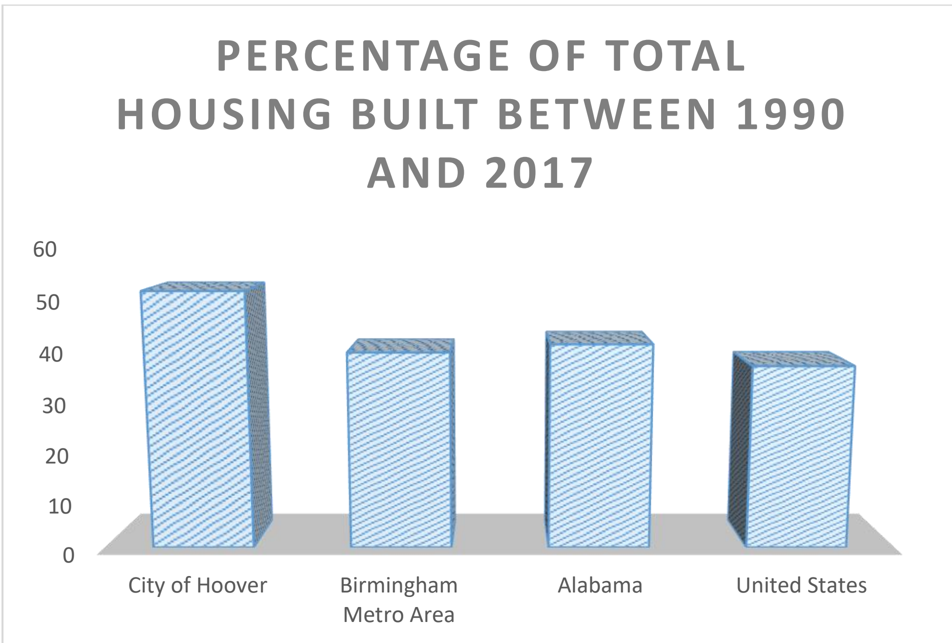


Percentage Growth in Population 1990 - 2017

	City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
1990-2000	44.6%	10.0%	10.0%	13.2%
2000-2010	29.6%	7.2%	7.5%	9.7%
2010-2017 (est.)	7.2%	2.0%	2.1%	5.0%

Age of Housing

To a large extent, Hoover's population boom has been a function of the large amount of available land for new subdivisions outside of the original Hoover boundaries. Overall, as shown below, nearly half of all Hoover residences have been built since 1990. However, in terms of recent growth, Hoover's housing increases are not significantly different than those of the metro area, state, or nation since 2010.

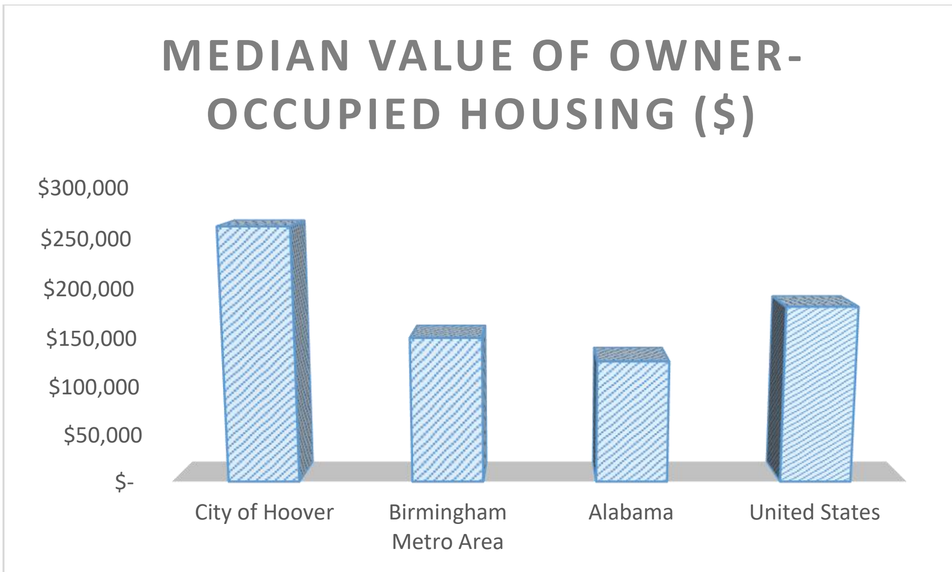


Percentage Of Housing Units By Year Built

	City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
Housing, Built 2010 or Later	7.9	8	8.6	10.7
Housing, Built 2000 to 2009	19	14.9	14.9	13.2
Housing, Built 1990 to 1999	24.5	16.5	17.5	12.8

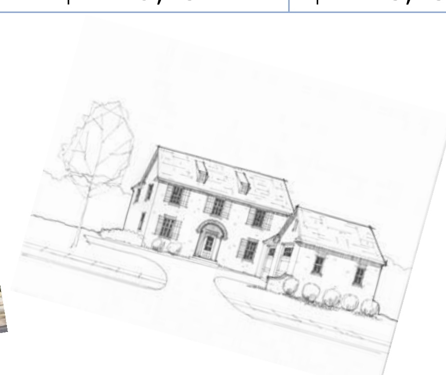
Housing Values

Like most of the suburban cities south and east of Downtown Birmingham, housing in Hoover is of relatively high value compared to the median value of housing across the metro area, the state, and the nation, with a median value in excess of $260,000.



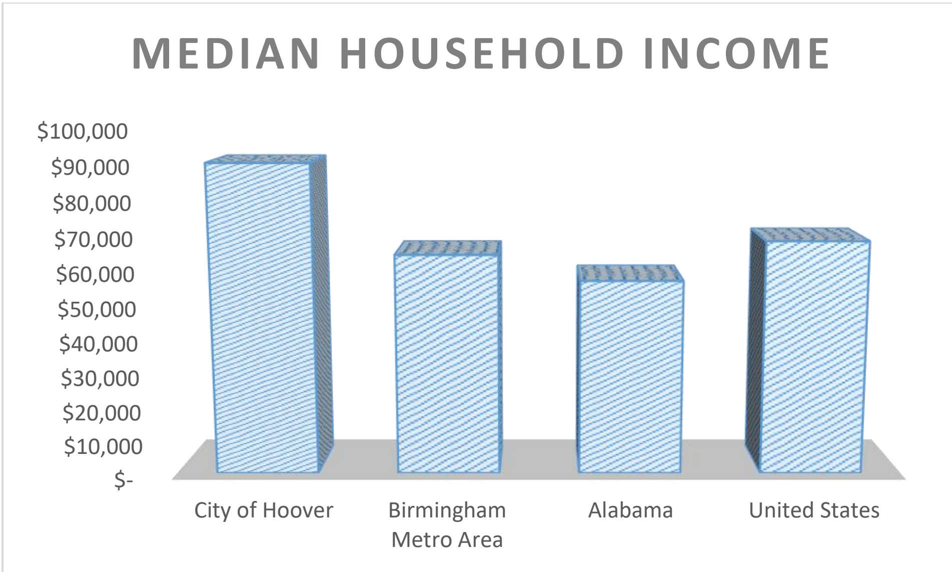
Median Value Of Owner-Occupied Housing ($)

	City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
	$ 260,954	$ 149,252	$ 125,256	$ 180,788



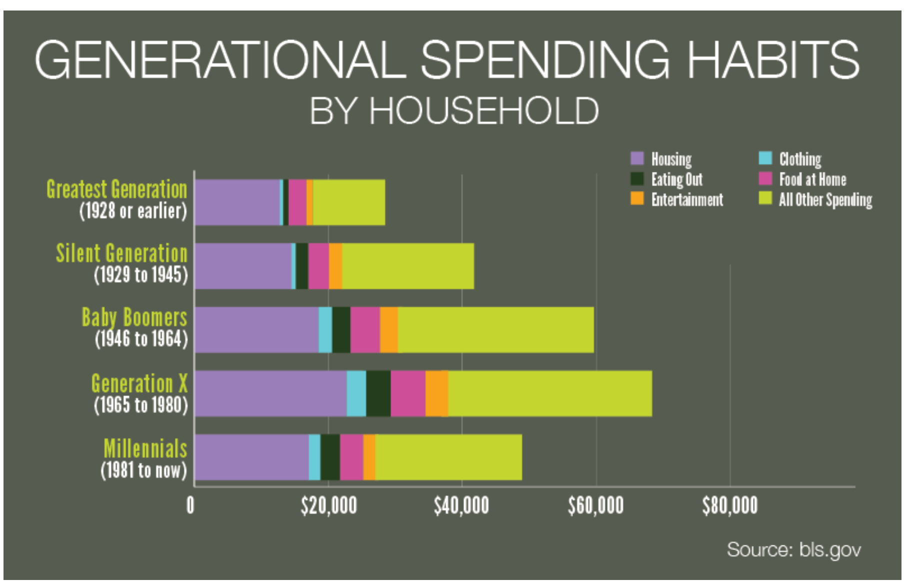
Personal Income Characteristics

Similarly, the population of Hoover earns significantly more per household than the populations of the metro area, state, or nation, with a median household income of over $90,000 per year.



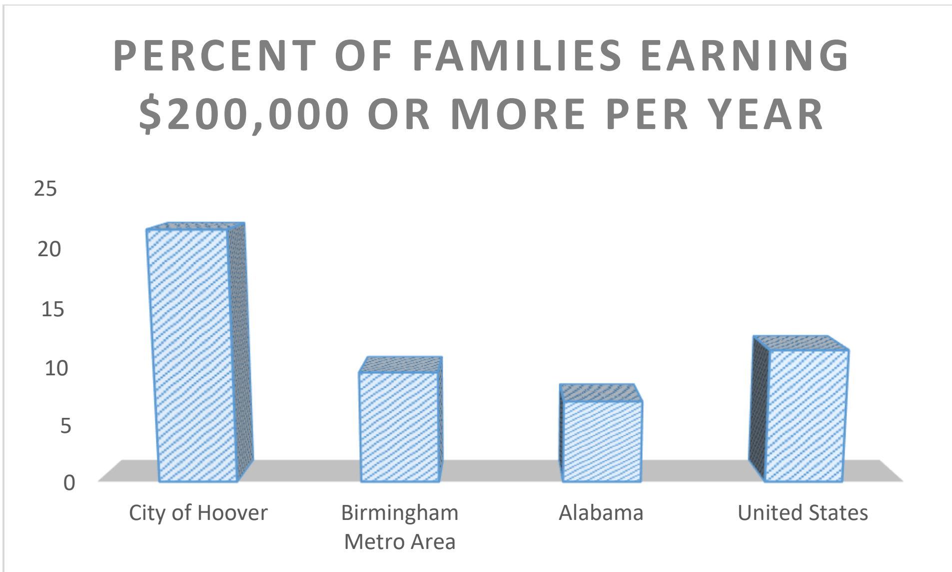
Median Household Income ($)

City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
$ 90,428	$ 64,370	$ 56,896	$ 68,272



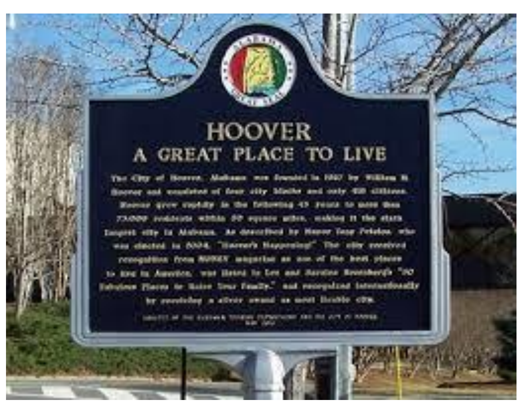
Personal Income Characteristics (Continued)

Perhaps even more telling is the percent of Hoover households earning over $200,000 per year. Hoover's 21.5% percentage is over twice as high as that of the metro area, three times that of Alabama, and ten points higher than that of the nation as a whole.



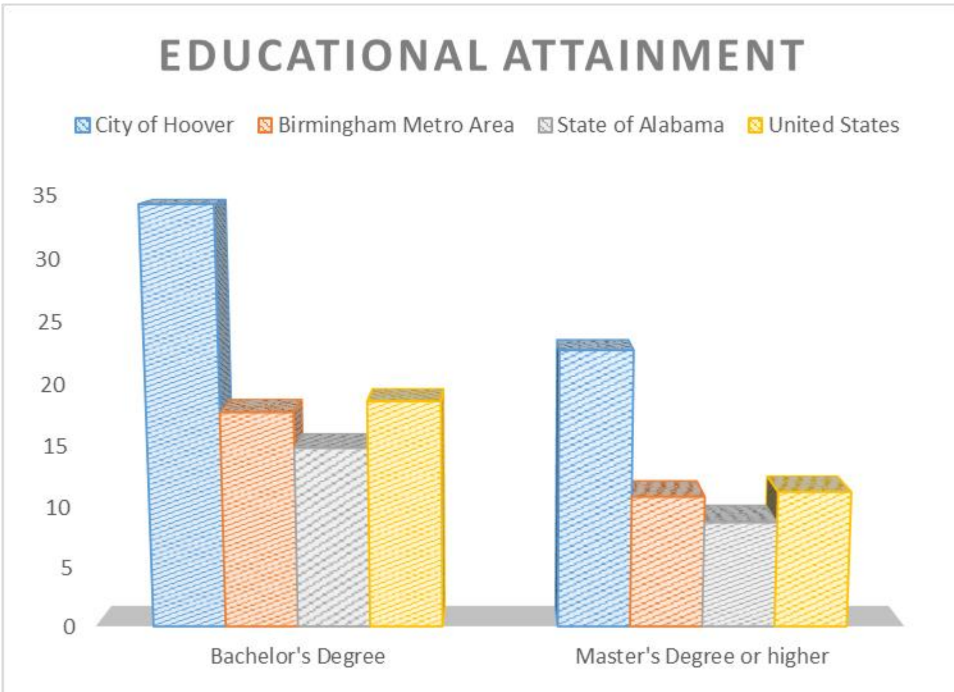
Percentage of Families Earning $200,000 or Over Per Year

City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
21.5	9.5	7	11.4



Education Characteristics

The characteristics above certainly demonstrate the economic successes of the Hoover population. However, the most significant driver of that success appears to be education. Hoover is home to a very highly educated population compared to the metro area, the state, and the nation. As shown below, nearly 35 % percent of Hoover's adult population has earned a Bachelor's Degree and nearly 23% have earned a graduate or professional degree.

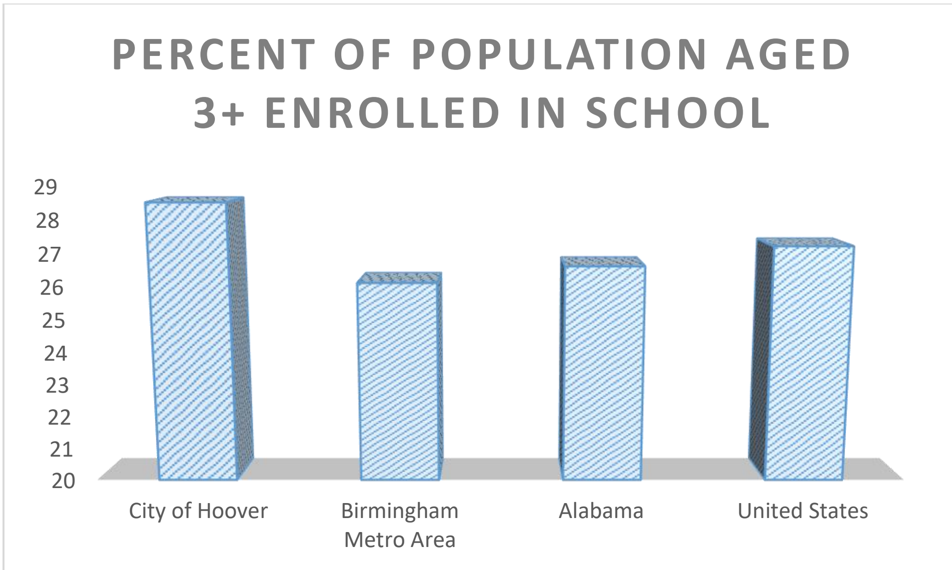


Educational Attainment (Pop 25+)

	City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
Bachelor's Degree	34.2	17.7	14.8	18.6
Master's Degree or higher	22.7	10.8	8.7	11.2

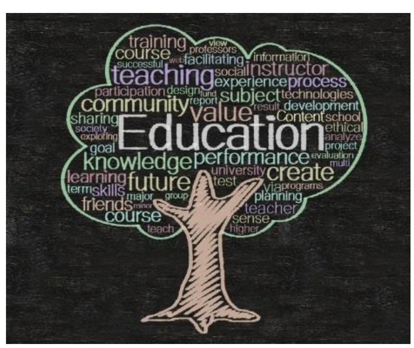
Education Characteristics (Continued)

At the same time, Hoover is home to a large young adult population comprised largely of families, with 28.5 % of the population comprised of students still enrolled in school. This is higher, although not dramatically higher, than the metro area, state, and nation.



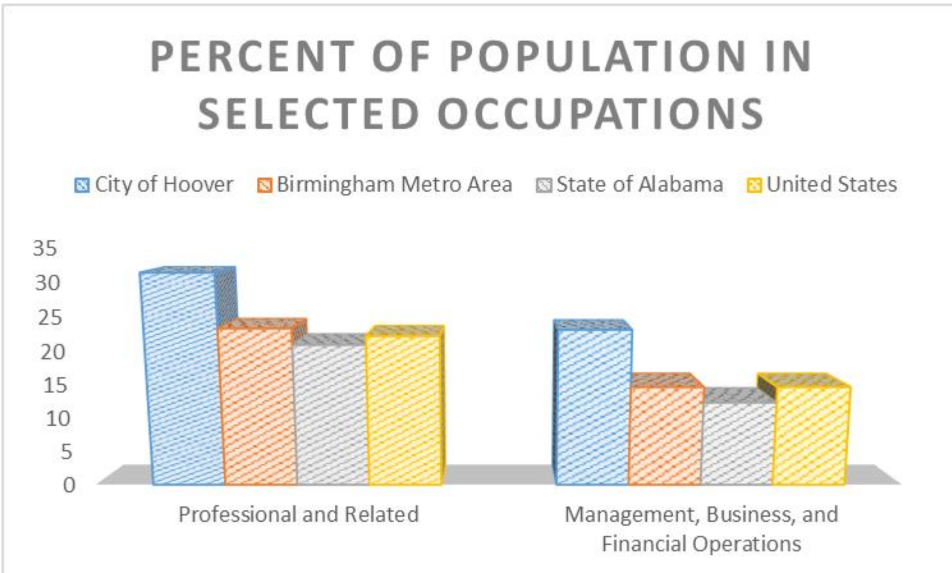
Percent Of The Population 3+ Enrolled In School

City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
28.5	26.1	26.6	27.2



Employment Characteristics

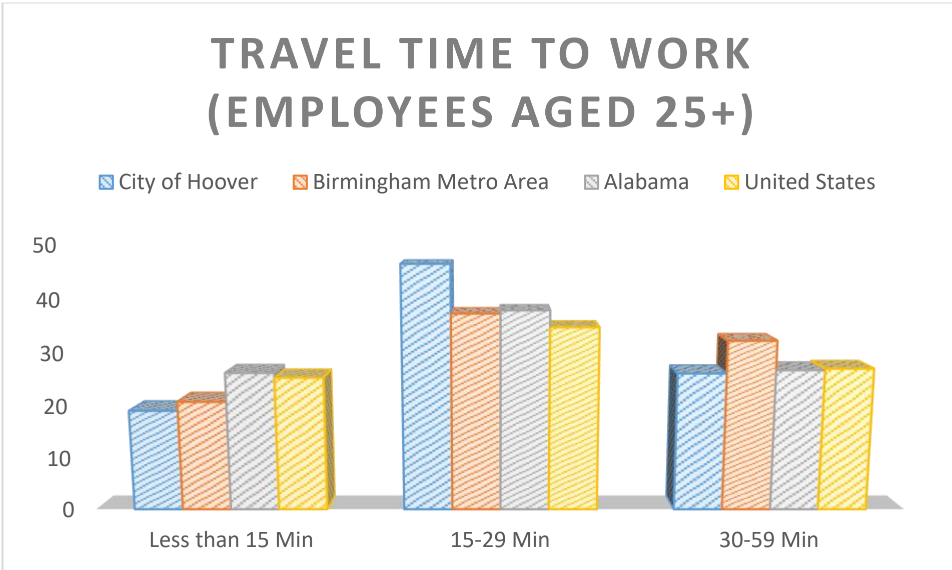
Hand-in-hand with high income households and well-educated adults, Hoover's population is very significantly skewed toward professional careers. Nearly 55% of Hoover's employed population is employed in managerial, business, and financial occupations or professional and related occupations. These percentages are significantly higher that those of the metro area, state, or nation.



Percent Of Population (Aged 16+) In Selected Occupations

	City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
Professional and Related	31.3	23.3	20.9	22.2
Management, Business, and Financial Operations	23.1	14.7	12.4	14.7

However, these professional and managerial jobs do not necessarily exist in Hoover itself. Compared to the metro area, state, and nation, a smaller percent of Hoover employees travel less than 15 minutes to their jobs and a significantly larger percent must drive between 15 and 29 minutes to work.

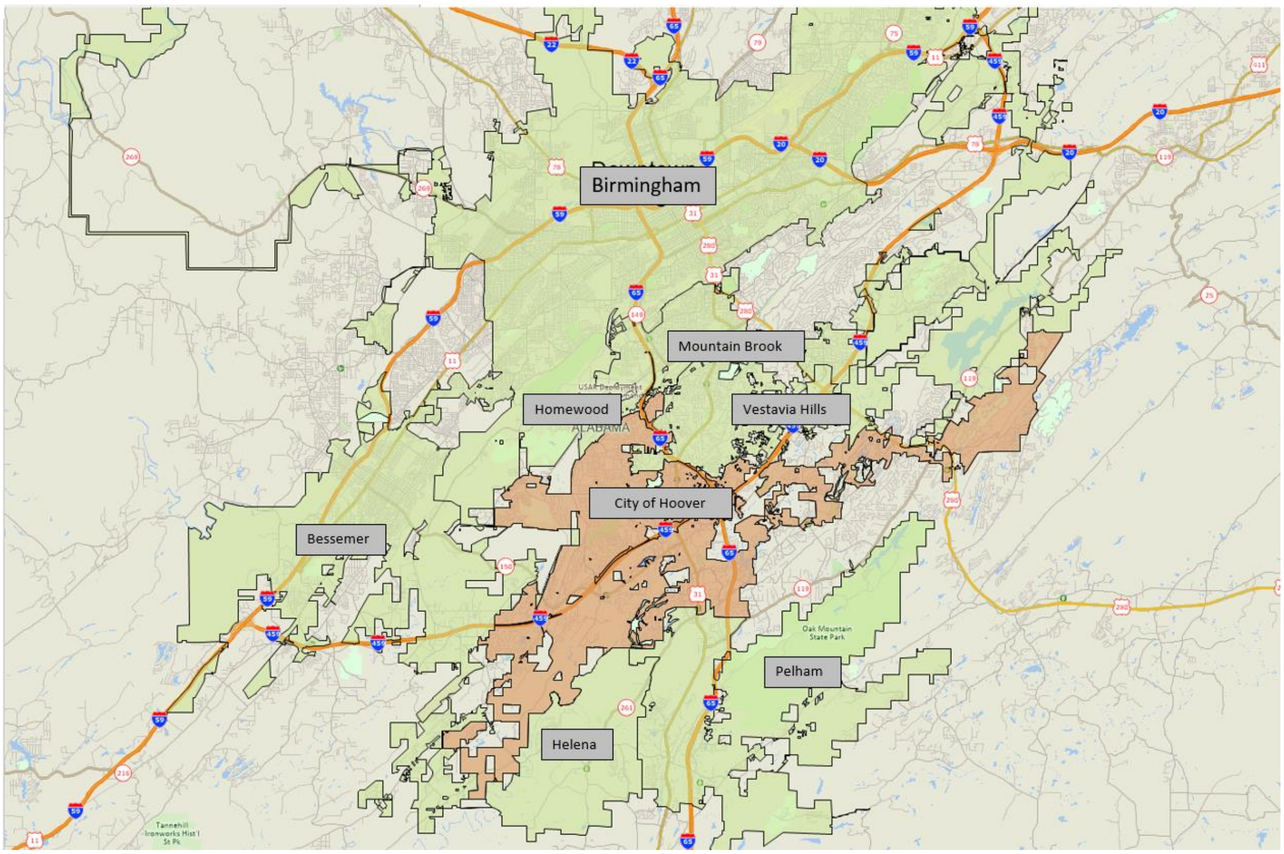


Travel Time To Work (Employees Aged 16 yrs +)

	City of Hoover	Birmingham-Hoover Metro Area	Alabama	United States
Less than 15 Min	19.1	20.8	26.3	25.4
15-29 Min	46.4	37.3	37.9	34.8
30-59 Min	26.2	32.3	26.8	27.1
60+ Min	2	4.7	4.2	5.6
90+ Min	1.4	1.8	1.9	2.5

Hoover Compared to Its Surrounding Cities

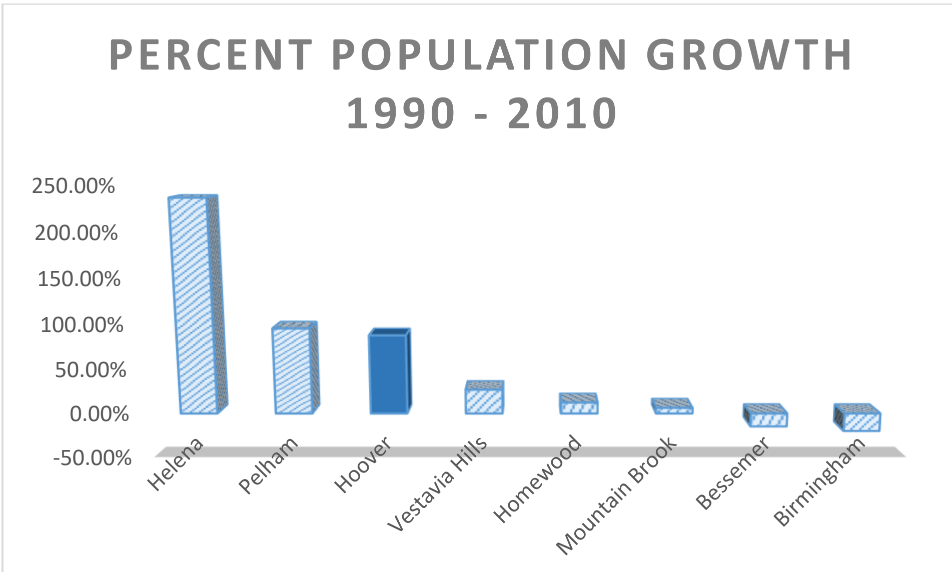
Hoover is the largest of the suburban cities located south of Downtown Birmingham. Along with Birmingham itself, the older suburbs of Mountain Brook, Homewood, and Vestavia Hills to the north and east and Bessemer to the west, Hoover is flanked by the even newer growth areas of Helena and Pelham to the south and southwest.



City of Hoover and Surrounding Cities

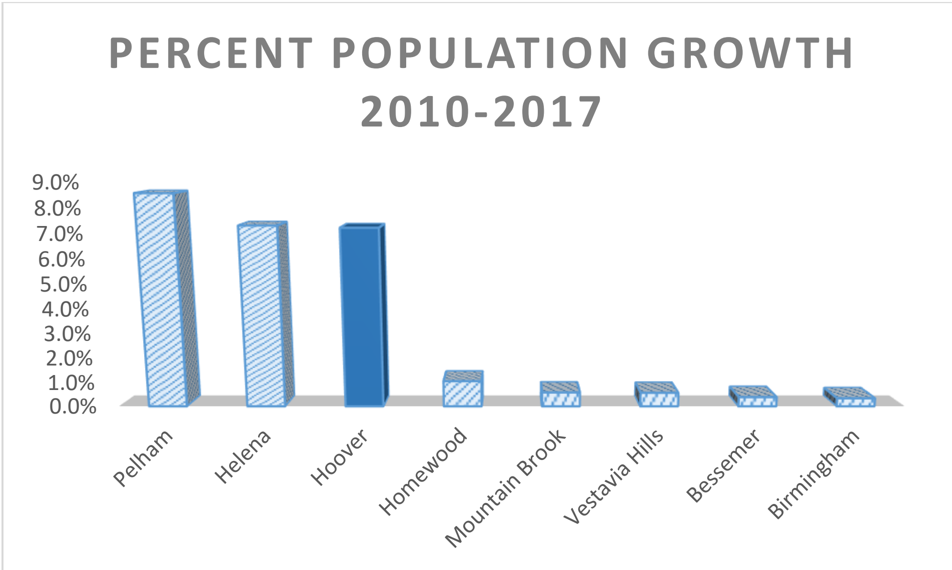
Population Growth

As shown below, Pelham and Helena have been the only two surrounding cities growing faster than Hoover, each of which started from a much smaller population base. The older, landlocked cities of Homewood, Mountain Brook, and to some extent Vestavia Hills have experienced little population growth in the recent past, and both Birmingham and Bessemer lost significant population between 1990 and 2010.



Since 2010, Hoover's population growth has nearly kept up with Pelham and Helena percentage-wise, even with its much larger population. These growth figures dwarf those of the other established cities in the area.

Population Growth (Continued)

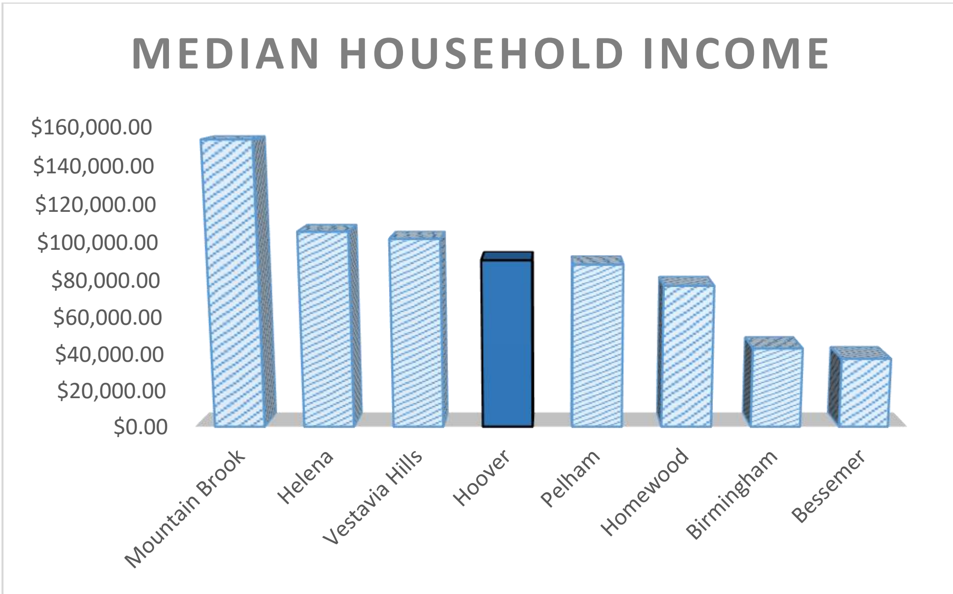


Percent Population Growth 1990-2017

City Name	Census Population (4/1/1990)	Census Population (4/1/2000)	Census Population (4/1/2010)	Estimated Population (1/1/2017)	Percent Growth (2000/ 1990)	Percent Growth (2010/ 2000)	Estimated Percent (2017/ 2010)
Bessemer	32,190	30,121	27,456	27,561	-6.4%	-8.8%	0.4%
Birmingham	265,022	242,354	212,237	212,941	-8.6%	-12.4%	0.3%
Helena	4,998	10,040	16,793	18,017	100.9%	67.3%	7.3%
Homewood	22,395	25,433	25,167	25,430	13.6%	-1.0%	1.0%
Hoover	43,562	62,994	81,619	87,496	44.6%	29.6%	7.2%
Mountain Brook	19,196	19,879	20,413	20,530	3.6%	2.7%	0.6%
Pelham	10,941	16,631	21,352	23,176	52.0%	28.4%	8.5%
Vestavia Hills	26,817	30,100	34,033	34,224	12.2%	13.1%	0.6%

Household Income

Across most economic characteristics, Hoover falls near the midpoint of Birmingham and its suburban "over-the-mountain" neighbors. It is relatively wealthy but less so per household than Mountain Brook, Vestavia Hills, and upstart Helena.

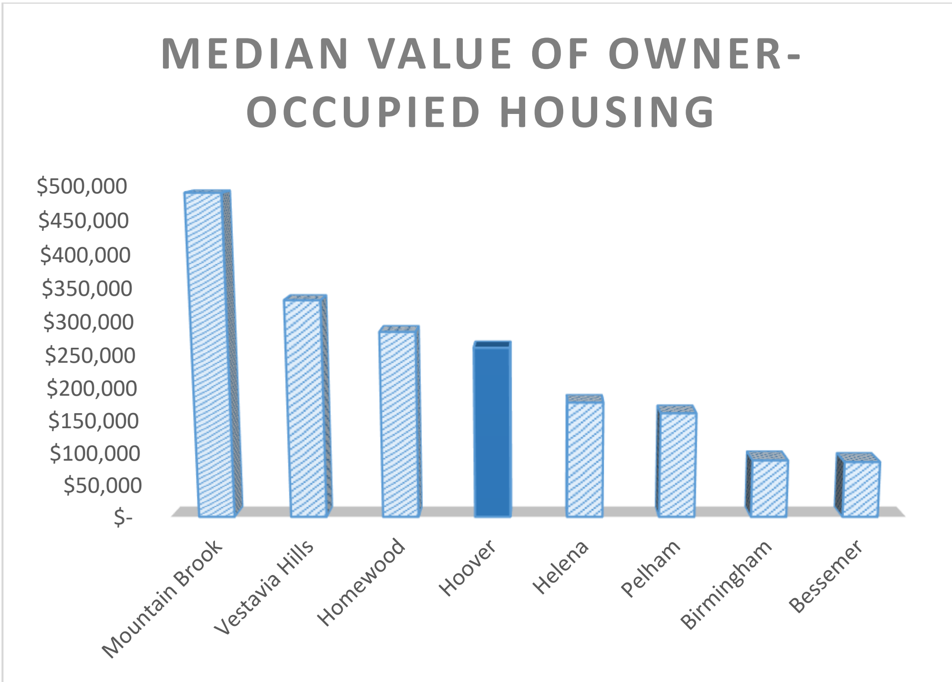


General Income Characteristics

City Name	Median Household Income ($)	Per Capita Income ($)
Mountain Brook	$ 153,132.00	$ 81,979.00
Helena	$ 105,413.00	$ 41,267.00
Vestavia Hills	$ 101,628.00	$ 62,983.00
Hoover	$ 90,428.00	$ 48,217.00
Pelham	$ 88,137.00	$ 39,253.00
Homewood	$ 76,811.00	$ 39,578.00
Birmingham	$ 43,001.00	$ 26,586.00
Bessemer	$ 37,381.00	$ 21,742.00

Value Of Housing

Similarly, the median value of Hoover's owner-occupied housing is lower than that of Mountain Brook, Vestavia Hills, and Homewood, but higher than that of the other suburban cities.

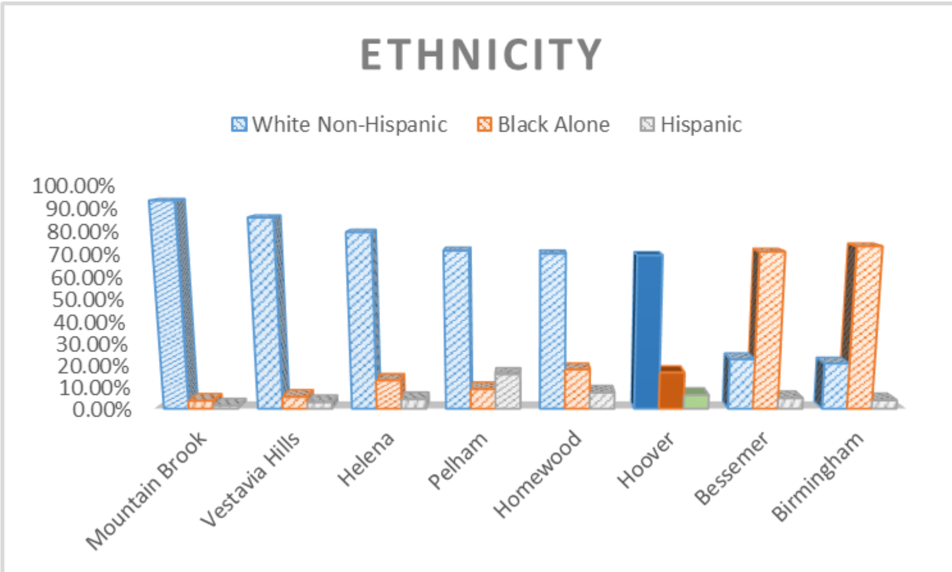


Median Value Of Owner-Occupied Housing

Mountain Brook	$ 489,325
Vestavia Hills	$ 332,052
Homewood	$ 284,773
Hoover	$ 260,954
Helena	$ 177,723
Pelham	$ 161,279
Birmingham	$ 88,408
Bessemer	$ 85,881

Diversity

Conversely, Hoover is a much more diverse city than its wealthier neighbors. Like Homewood, Hoover's ethnic mix is much more refective of a balance between cultures than especially Mountain Brook and Vestavia Hills.

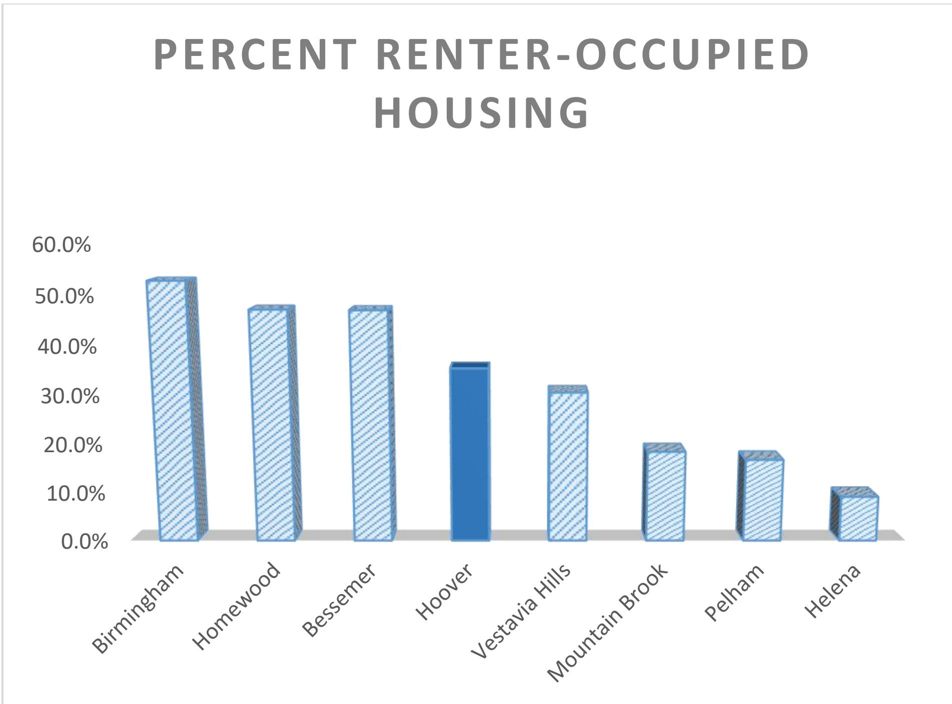


Ethnicity

Name	White Non-Hispanic	African-American	Hispanic	Asian	Other
Mountain Brook	92.8%	3.6%	1.3%	1.4%	0.9%
Vestavia Hills	85.5%	5.4%	2.9%	4.8%	1.4%
Helena	79.1%	13.0%	4.3%	2.0%	1.6%
Pelham	71.1%	9.0%	15.8%	2.8%	1.3%
Homewood	69.8%	18.0%	7.4%	2.9%	1.9%
Hoover	65.9%	15.8%	6.0%	5.8%	6.5%
Bessemer	22.7%	70.6%	4.8%	0.5%	1.4%
Birmingham	20.7%	73.0%	3.8%	1.3%	1.1%

Housing Type

Similarly, the percent of Hoover's housing stock that is rental property is also near the midpoint of the eight cities. Just over 35% of Hoover's housing base comprised of rentals, significantly less than Homewood, Bessemer, and Birmingham but more than Vestavia Hills and much more than Mountain Brook, Pelham, and Helena.

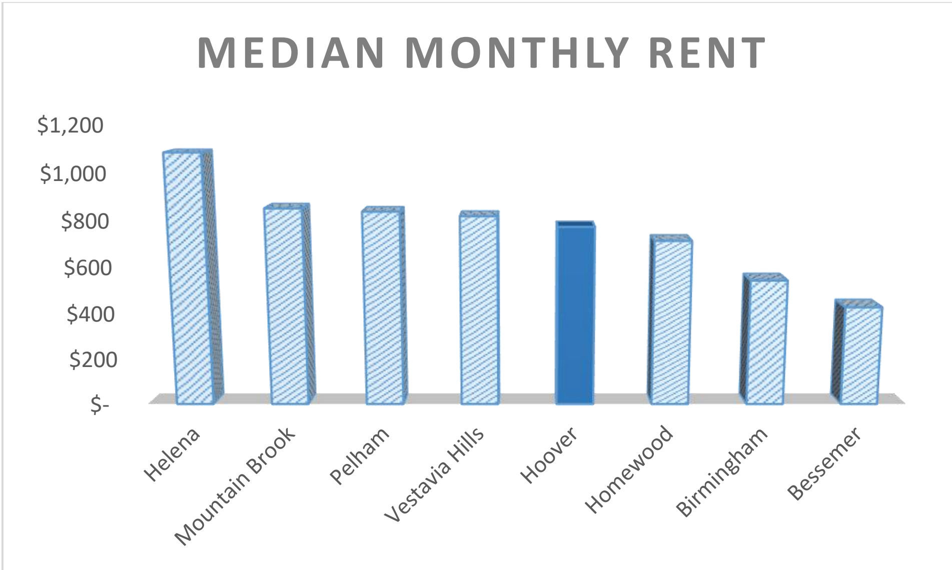


Housing Characteristics

	Housing, Occupied Units	Housing, Owner Occupied	Housing, Renter Occupied	Percent Renter Occupied
Birmingham	89,054	42,117	46,937	52.7%
Homewood	10,225	5,414	4,811	47.1%
Bessemer	10,849	5,756	5,093	46.9%
Hoover	33,979	21,944	12,035	35.4%
Vestavia Hills	14,253	9,892	4,361	30.6%
Mountain Brook	8,120	6,619	1,501	18.5%
Pelham	8,822	7,337	1,485	16.8%
Helena	6,509	5,913	596	9.2%

Housing Type (Continued)

The renting population of Hoover pays, on average, less for their rental housing than many of the surrounding cities, with Helena's renters paying the highest monthly payments. Hoover resembles Homewood in terms of its median rent, although Hoover has a smaller percent of its population living in rental housing.

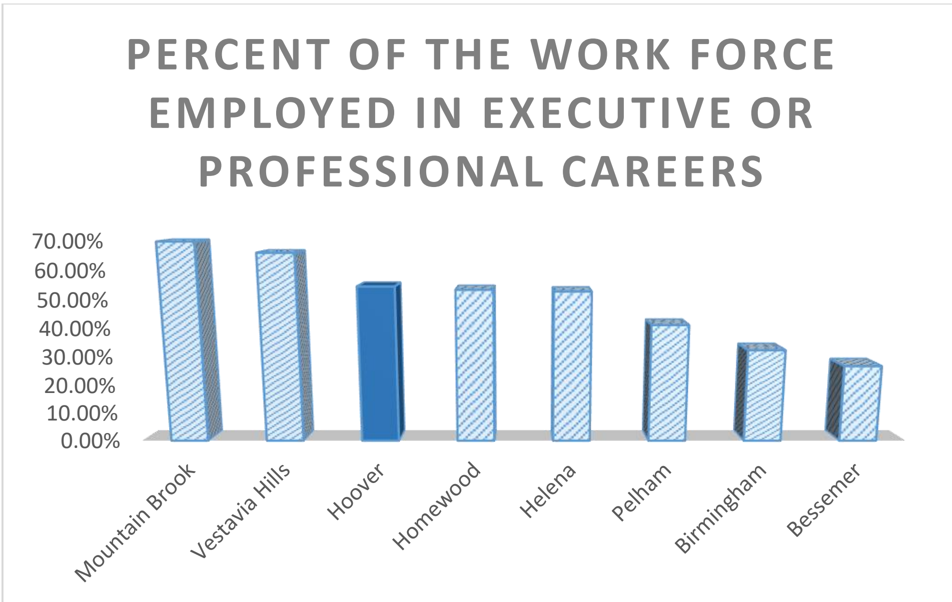


Rental Characteristics

City	Median Rent ($)
Helena	$ 1,083
Mountain Brook	$ 850
Pelham	$ 836
Vestavia Hills	$ 817
Hoover	$ 772
Homewood	$ 713
Birmingham	$ 543
Bessemer	$ 427

Employment

Even compared to its neighboring cities, Hoover's workforce is skewed heavily towards executive and professional careers, trailing only Mountain Brook and Vestavia hills in the percentage of working population in those typically high-income career fields.

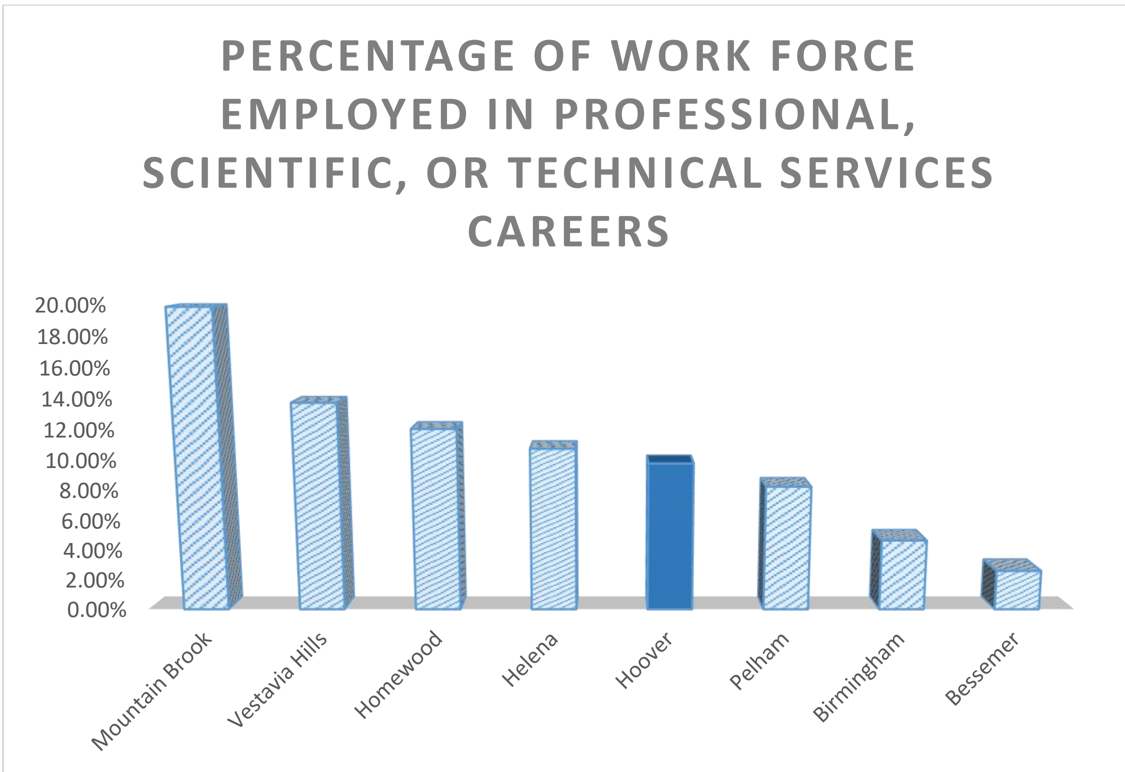


Employment Characteristics

Percent of the work force employed in:	Management, Business, and Financial Operations	Professional and Related	Total
Mountain Brook	27.6%	41.8%	69.4%
Vestavia Hills	29.6%	36.1%	65.7%
Hoover	23.1%	31.3%	54.3%
Homewood	18.0%	35.2%	53.2%
Helena	21.5%	31.1%	52.6%
Pelham	16.1%	25.1%	41.1%
Birmingham	11.6%	20.8%	32.4%
Bessemer	10.5%	16.3%	26.8%

Employment (Continued)

However, in terms of the percent of the work force employed in Professional, Scientific, and Technical Services, including engineering and science-type careers, Hoover ranks significantly behind Mountain Brook, Vestavia hills, Homewood, and Helena.

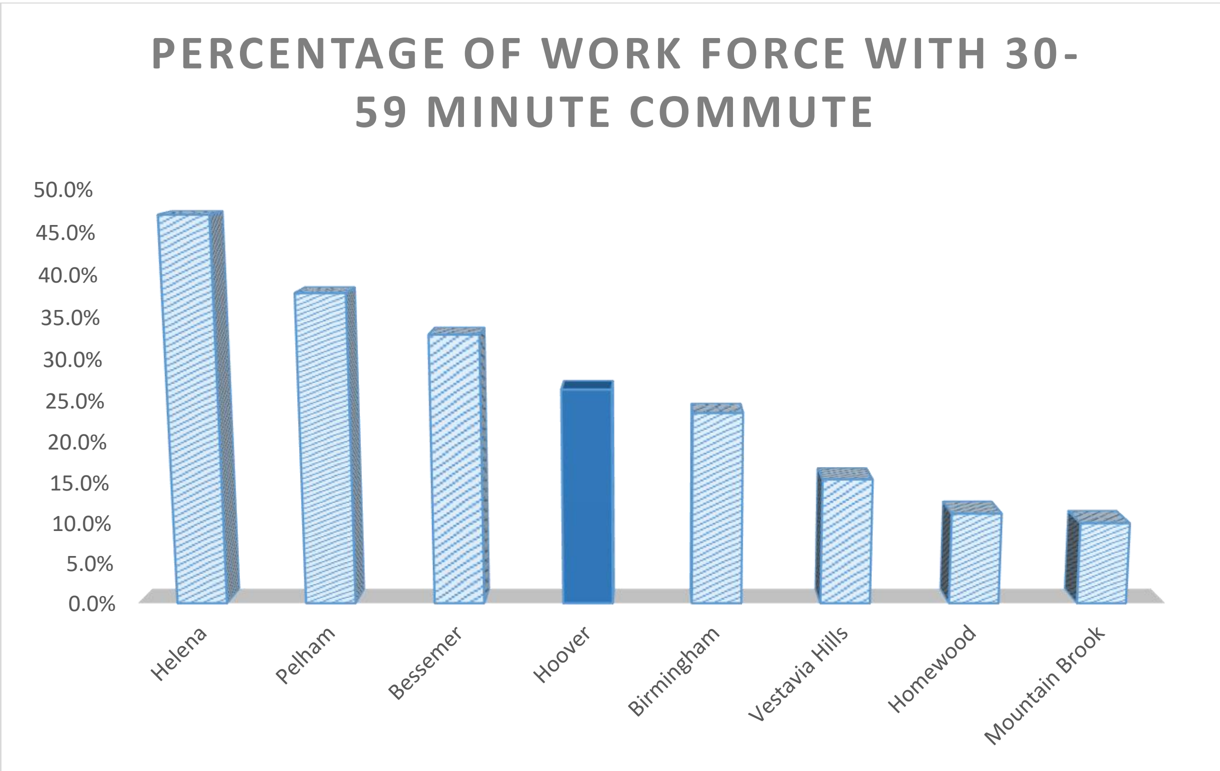


Employment Characteristics

Percent of the work force employed in:	Professional, Scientific, and Technical Services
Mountain Brook	19.80%
Vestavia Hills	13.70%
Homewood	12.00%
Helena	10.72%
Hoover	9.75%
Pelham	8.23%
Birmingham	4.65%
Bessemer	2.60%

Employment (Continued)

In addition, Hoover's working adults still drive further to their places of employment than all but three of its surrounding cities. The evidence suggests that, rather than jobs within Hoover, most employees commute to downtown Birmingham or other areas rather to jobs located within Hoover itelf.

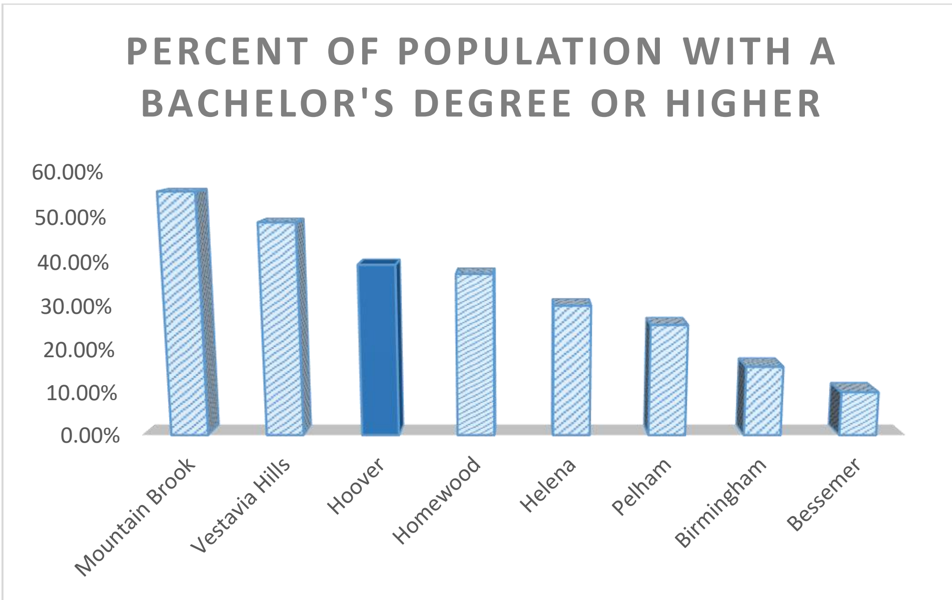


Average Commuting Time Per Day

Percent of workers commuting:	Less than 15 Minutes	15-29 Minutes	30-59 Minutes
Homewood	45.1%	37.7%	11.1%
Mountain Brook	38.3%	44.0%	9.9%
Vestavia Hills	26.1%	51.3%	15.3%
Birmingham	24.9%	46.4%	23.4%
Pelham	19.2%	32.6%	37.7%
Hoover	19.1%	46.4%	26.2%
Bessemer	20.3%	41.9%	32.8%
Helena	12.5%	29.3%	46.9%

Education

When it comes to an educated population, Hoover ranks third behind only Mountain Brook and Vestavia Hills in terms of the percent of the population with at least a Bachelor's Degree. With this degree of education in its work force, Hoover could provide an excellent labor force for high-technology firms which decide to either move to Hoover or start from a base in Hoover.

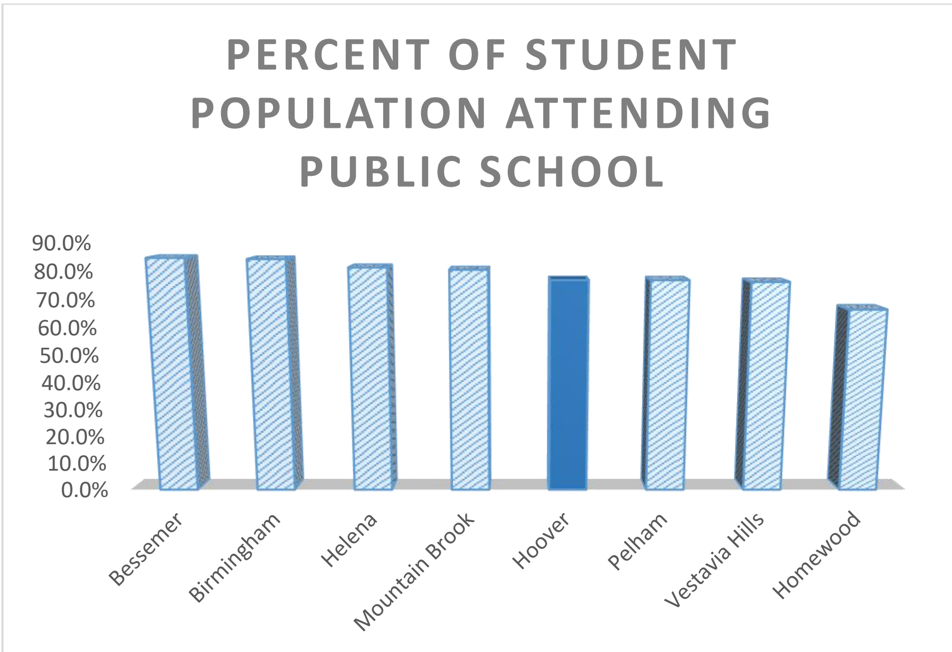


Educational Attainment

	Bachelor's Degree	Master's Degree	Professional Degree	Doctorate Degree
Mountain Brook	30.1%	10.8%	11.6%	2.9%
Vestavia Hills	26.6%	13.4%	5.7%	3.0%
Hoover	23.6%	10.6%	3.2%	2.0%
Homewood	20.2%	10.0%	4.6%	2.3%
Helena	21.5%	6.9%	1.0%	0.5%
Pelham	18.0%	5.5%	1.7%	0.4%
Birmingham	9.6%	4.0%	1.4%	1.0%
Bessemer	6.5%	2.6%	0.5%	0.5%

School Population

The City of Hoover, as well as several of the suburban cities surrounding Hoover, have public school systems ranked among the best in Alabama. It is not surprising, then, that over 75% of Hoover's school-aged children attend public elementary, middle, and high schools. Perhaps the only surprise is the relative low percentage of Homewood students attending public schools.



Percent of Student Population Attending Public School

	Number Enrolled in School	Number Enrolled in Public School	Percent Enrolled in Public School
Bessemer	6,232	5,260	84.4%
Birmingham	53,503	44,923	84.0%
Helena	5,343	4,329	81.0%
Mountain Brook	6,086	4,883	80.2%
Hoover	23,077	17,677	76.6%
Pelham	5,764	4,412	76.5%
Vestavia Hills	9,082	6,897	75.9%
Homewood	8,792	5,817	66.2%

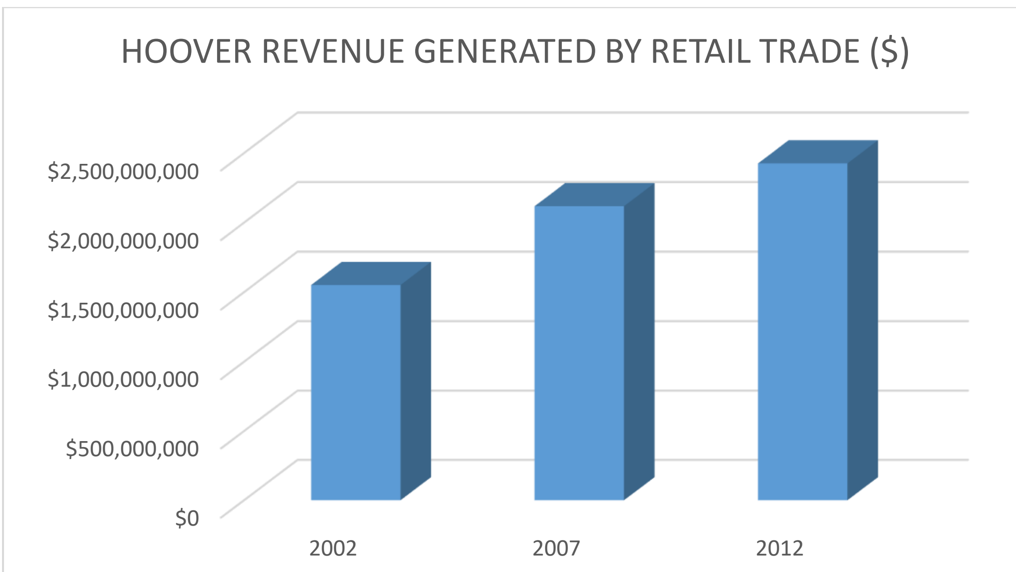
The Economy of Hoover

A Longitudinal Look at the Hoover Economy

The U.S. Economic Census offers the only factual information about the detailed economic characteristics of cities across the United States. The most recent retail census was completed in 2017, but its results will not be released until late in 2019. Therefore, the first part of this analysis will be limited to results from the most recent three census periods to show trends and patterns. The first section looks at sectors of Hoover's economy across time and the second looks at Hoover's economic sectors compared to its surrounding suburban cities and Birmingham.

Analysis of Hoover's Retail Sector

Since retail trade has played such a significant role in Hoover's economy, it is useful to examine the retail sector in depth. As of 2012, the retail sector was still in significant growth mode in Hoover, although employment in retail dipped slightly from 2007.



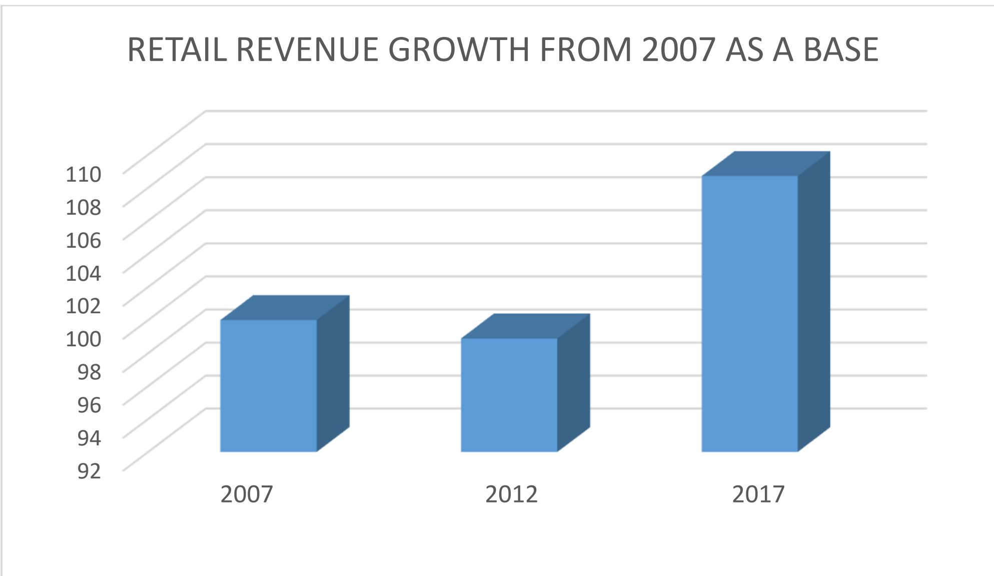
Number Of Retail Entities By Type 2012

441110	New car dealers	12
441120	Used car dealers	6
441310	Automotive parts and accessories stores	6
441320	Tire dealers	5
442110	Furniture stores	17
442210	Floor covering stores	1
442291	Window treatment stores	1
442299	All other home furnishings stores	11
443141	Household appliance stores	1
443142	Electronics stores	13
444110	Home centers	2
444120	Paint and wallpaper stores	4
444130	Hardware stores	1
444190	Other building material dealers	7
444210	Outdoor power equipment stores	1
444220	Nursery, garden center, and farm supply stores	1
445110	Supermarkets and other grocery (except convenience) stores	12
445120	Convenience stores	5
445310	Beer, wine, and liquor stores	3
446110	Pharmacies and drug stores	13
446120	Cosmetics, beauty supplies, and perfume stores	10
446130	Optical goods stores	10
446191	Food (health) supplement stores	3

446199	All other health and personal care stores	2
447110	Gasoline stations with convenience stores	34
447190	Other gasoline stations	2
448110	Men's clothing stores	3
448120	Women's clothing stores	27
448130	Children's and infants' clothing stores	7
448140	Family clothing stores	17
448150	Clothing accessories stores	6
448190	Other clothing stores	7
448210	Shoe stores	29
448310	Jewelry stores	15
448320	Luggage and leather goods stores	2
451110	Sporting goods stores	6
451120	Hobby, toy, and game stores	4
451130	Sewing, needlework, and piece goods stores	1
451140	Musical instrument and supplies stores	3
451211	Book stores	2
452111	Department stores (except discount department stores)	4
452112	Discount department stores	1
452910	Warehouse clubs and supercenters	4
452990	All other general merchandise stores	9
453110	Florists	1
453210	Office supplies and stationery stores	5
453220	Gift, novelty, and souvenir stores	10
453310	Used merchandise stores	8
453910	Pet and pet supplies stores	5
453920	Art dealers	2
454390	Other direct selling establishments	5

Retail Revenue Growth 2007 – 2017

Revenue generated by Hoover's retail sector is captured by the city as part of the calculation of its tax base. Using 2007 as a base year (an index of 100), total retail revenue did decline slightly from 2007 to 2012, but has rebounded strongly since then, with 2017's figures 7.5 percent higher than 2007's revenue and 8.7 percent higher than 2012. However, this growth is still less than the rate of inflation, which has been calculated by the Bureau of Labor Statistics (across the entire US economy) at 1.18 between 2007 and 2017.



Hoover Retail Revenue Change Since 2007

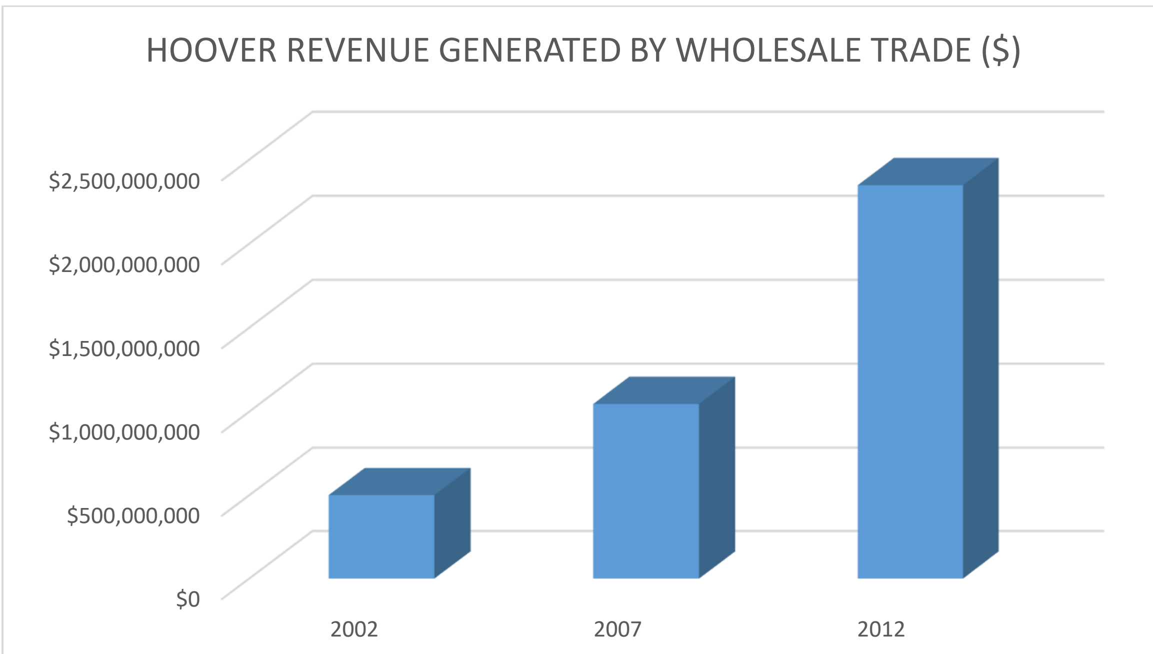
2007	2012	2017
100	98.89	107.50

Source: Tax data, City of Hoover

Other Economic Sectors

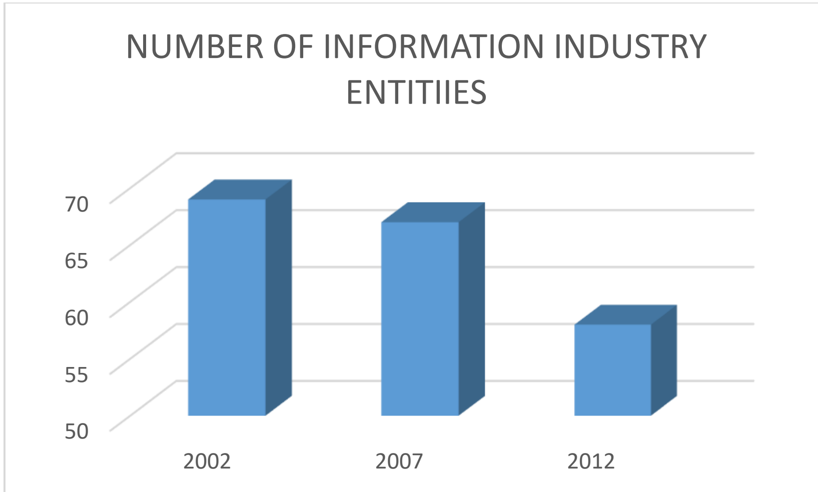
Outside of Retail Trade, the economy of Hoover is comprised of several basic sectors, including Wholesale Trade, Information Providers, Real Estate Sales and Leasing, Professional-Scientific-Technical Services, Administrative Services, Educational Services, Health Care and Social Services, Arts-Entertainment-Recreation Services, and Accommodation and Food Services. The following graphs and tables show the revenues generated by these sectors and employment in these sectors for the most recent three US Economic Census reports, as well as details of the number of entities in each sector by type from the 2012 Economic Census.

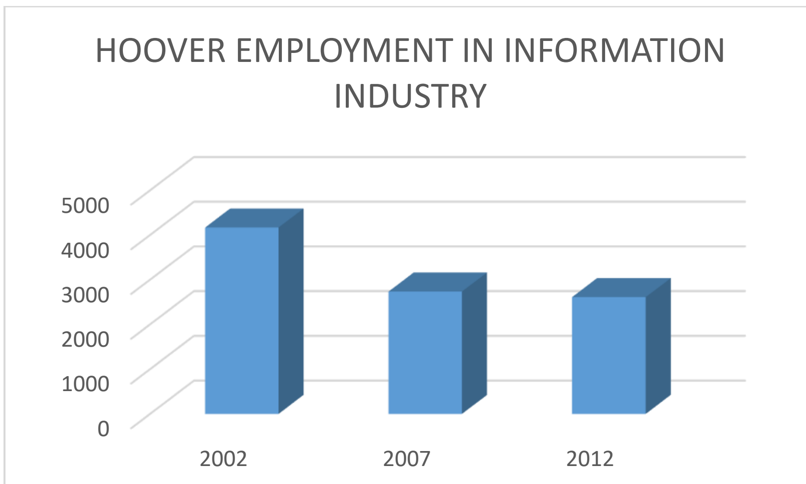
Where detailed figures are not reported in the Census due to disclosure potential, only the number of firms are reported.



Number Of Wholesaling Entities 2012

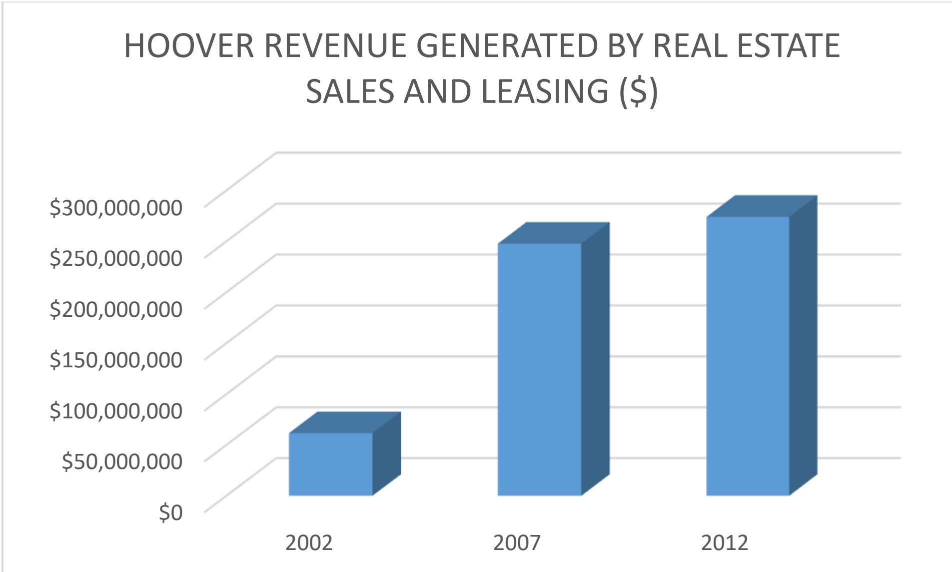
4231	Apparel, piece goods, and notions merchant wholesalers	3
4232	Beer, wine, and distilled alcoholic beverage merchant wholesalers	1
4233	Drugs and druggists' sundries merchant wholesalers	4
4234	Furniture and home furnishing merchant wholesalers	2
4235	Grocery and related product merchant wholesalers	3
4236	Hardware, plumbing and heating equipment and supplies merchant wholesalers	4
4237	Household appliances and electrical and electronic goods merchant wholesalers	10
4238	Lumber and other construction materials merchant wholesalers	2
4239	Machinery, equipment, and supplies merchant wholesalers	11
4241	Metal and mineral (except petroleum) merchant wholesalers	3
4242	Miscellaneous durable goods merchant wholesalers	6
4243	Miscellaneous nondurable goods merchant wholesalers	6
4244	Motor vehicle and motor vehicle parts and supplies merchant wholesalers	5
4248	Paper and paper product merchant wholesalers	2
4249	Professional and commercial equipment and supplies merchant wholesalers	18

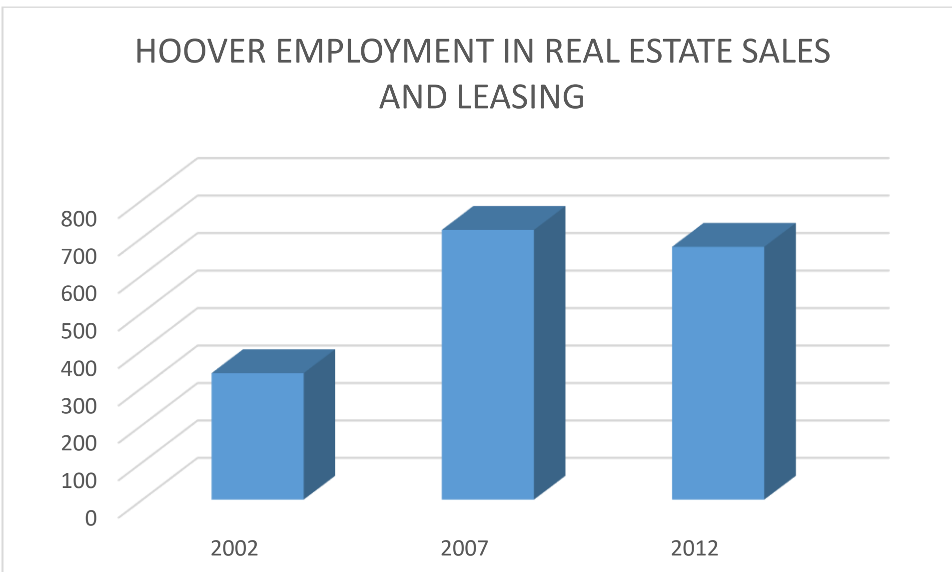




Number Of Information Services Entities 2012

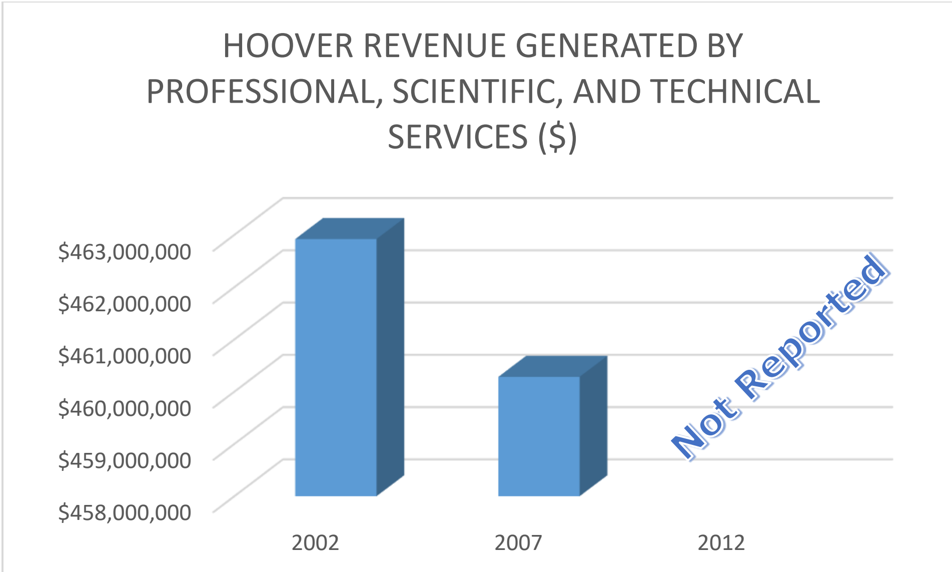
511110	Newspaper publishers	1
511120	Periodical publishers	4
511130	Book publishers	1
511199	All other publishers	1
511210	Software publishers	9
512110	Motion picture and video production	4
512131	Motion picture theaters (except drive-ins)	2
512240	Sound recording studios	1
515120	Television broadcasting	2
517110	Wired telecommunications carriers	13
517210	Wireless telecommunications carriers (except satellite)	8
517911	Telecommunications resellers	1
518210	Data processing, hosting, and related services	10
519130	Internet publishing and broadcasting and web search portals	1

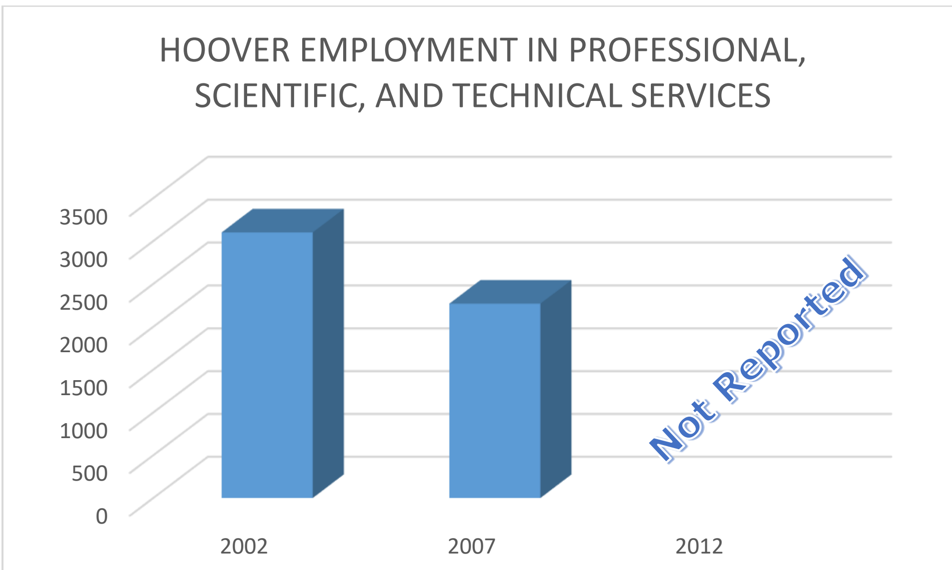




Number Of Real Estate And Rental And Leasing Entities 2012

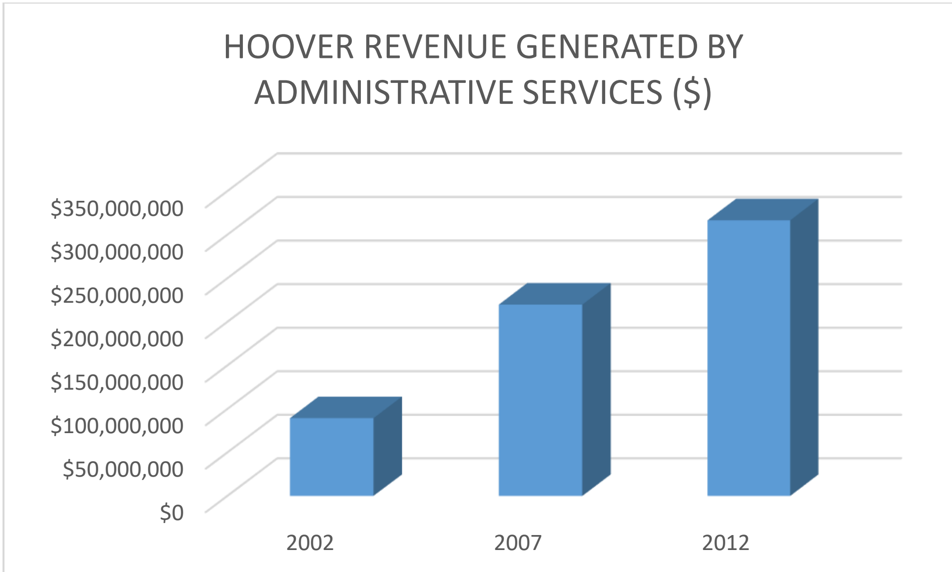
531110	Lessors of residential buildings and dwellings	15
531120	Lessors of nonresidential buildings (except miniwarehouses)	8
531130	Lessors of miniwarehouses and self-storage units	6
531210	Offices of real estate agents and brokers	26
531311	Residential property managers	8
531312	Nonresidential property managers	3
531320	Offices of real estate appraisers	7
531390	Other activities related to real estate	3

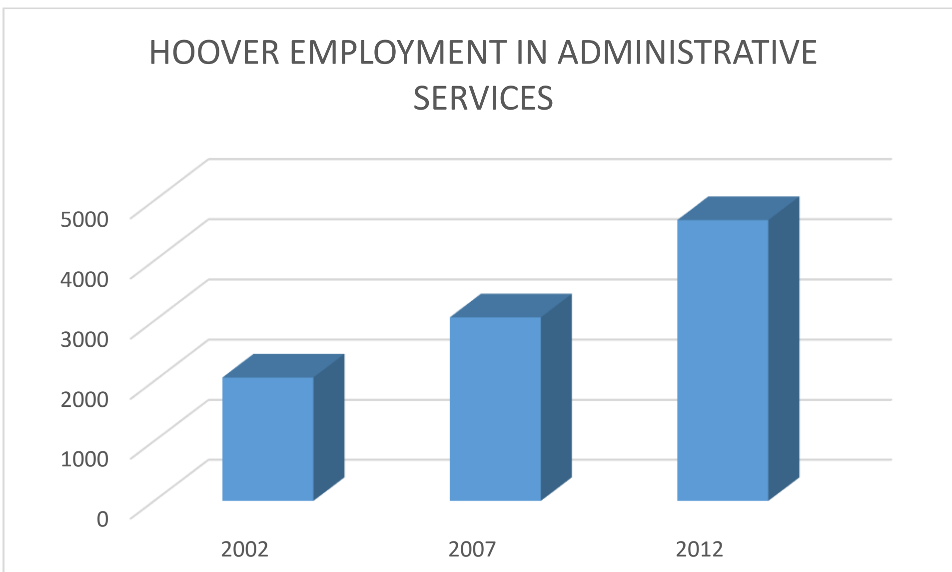

HOOVER REVENUE GENERATED BY PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES ($)
$463,000,000
$462,000,000
$461,000,000
$460,000,000
$459,000,000
$458,000,000
2002
2007
2012
Not Reported


HOOVER EMPLOYMENT IN PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES
3500
3000
2500
2000
1500
1000
500
0
2002
2007
2012
Not Reported

Number Of Professional, Scientific, And Technical Services Entities 2012

533110	Lessors of nonfinancial intangible assets (except copyrighted works)	4
541110	Offices of lawyers	32
541191	Title abstract and settlement offices	3
541211	Offices of certified public accountants	35
541213	Tax preparation services	9
541214	Payroll services	4
541219	Other accounting services	10
541310	Architectural services	4
541320	Landscape architectural services	1
541330	Engineering services	26
541350	Building inspection services	1
541370	Surveying and mapping (except geophysical) services	2
541410	Interior design services	3
541430	Graphic design services	2
541511	Custom computer programming services	16
541512	Computer systems design services	19
541513	Computer facilities management services	4
541519	Other computer related services	2
541611	Administrative management and general management consulting services	27
541612	Human resources consulting services	7
541613	Marketing consulting services	8
541614	Process, physical distribution, and logistics consulting services	6
541618	Other management consulting services	3
541620	Environmental consulting services	2
541690	Other scientific and technical consulting services	6
541712	Research and development in the physical, engineering, and life sciences (except biotechnology)	5
541810	Advertising agencies	11
541820	Public relations agencies	2
541840	Media representatives	1
541850	Outdoor advertising	2
541860	Direct mail advertising	3
541890	Other services related to advertising	4
541910	Marketing research and public opinion polling	4
541921	Photography studios, portrait	4
541940	Veterinary services	12
541990	All other professional, scientific, and technical services	2


HOOVER REVENUE GENERATED BY ADMINISTRATIVE SERVICES ($)
$350,000,000
$300,000,000
$250,000,000
$200,000,000
$150,000,000
$100,000,000
$50,000,000
$0
2002
2007
2012

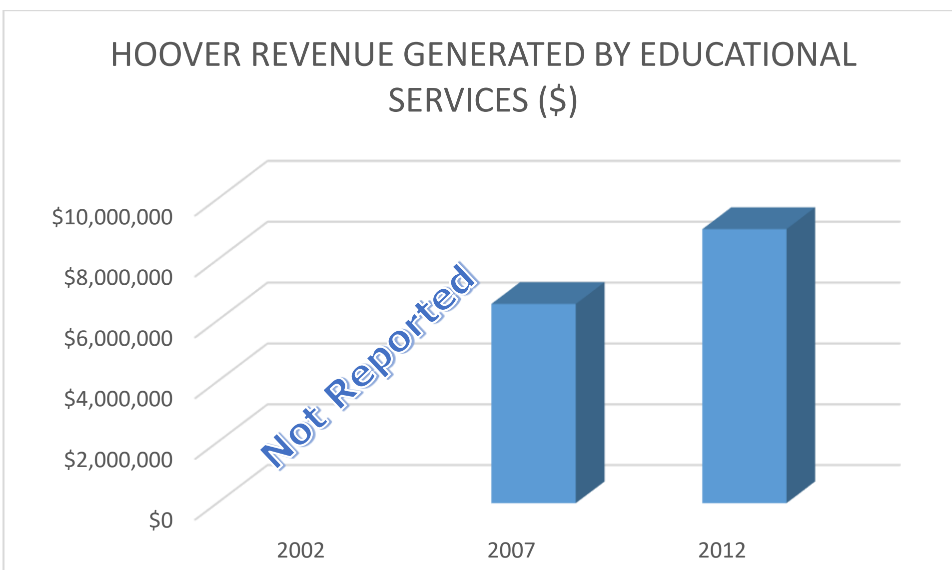

HOOVER EMPLOYMENT IN ADMINISTRATIVE SERVICES
5000
4000
3000
2000
1000
0
2002
2007
2012

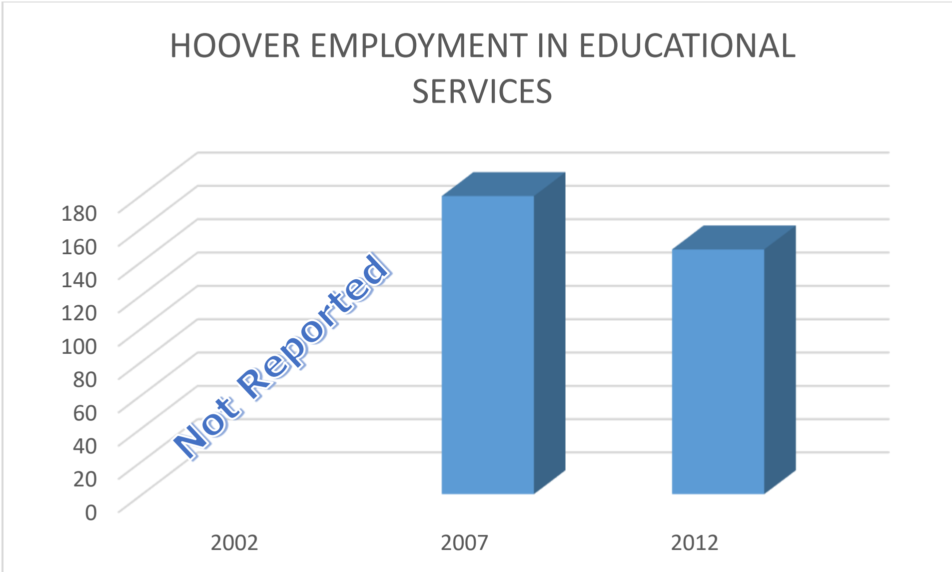
Number Of Administrative Services Entities 2012

561110	Office administrative services	15
561210	Facilities support services	1
561311	Employment placement agencies	1
561312	Executive search services	2
561320	Temporary help services	17
561330	Professional employer organizations	1
561422	Telemarketing bureaus and other contact centers	2
561431	Private mail centers	4
561439	Other business service centers (including copy shops)	2
561440	Collection agencies	2
561450	Credit bureaus	1
561499	All other business support services	1
561510	Travel agencies	2
561599	All other travel arrangement and reservation services	2
561611	Investigation services	5
561612	Security guards and patrol services	3
561621	Security systems services (except locksmiths)	3
561622	Locksmiths	1
561710	Exterminating and pest control services	3
561720	Janitorial services	14
561730	Landscaping services	20
561740	Carpet and upholstery cleaning services	3
561790	Other services to buildings and dwellings	3
561920	Convention and trade show organizers	2
561990	All other support services	2
562212	Solid waste landfill	1

Number Of Banking, Finance, And Insurance Entities 2012

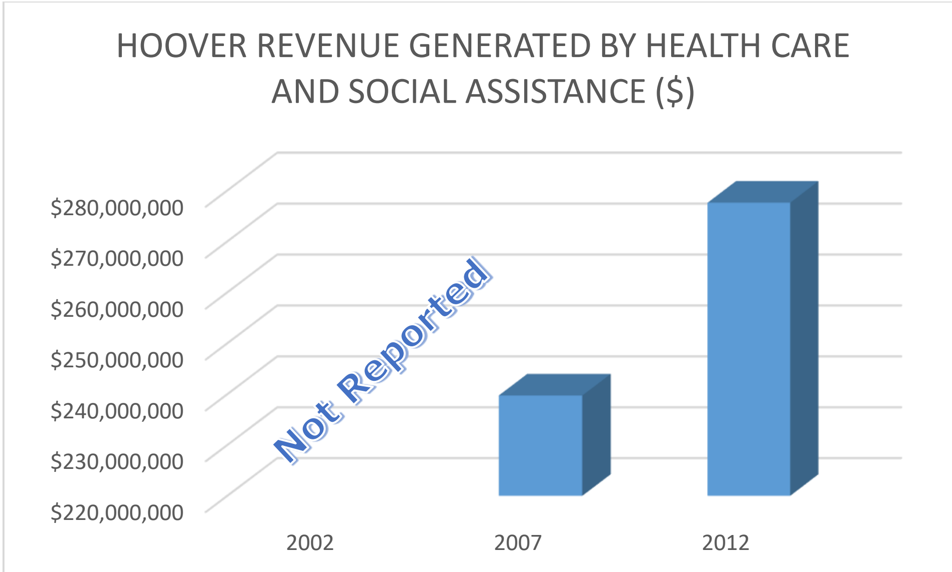
522110	Commercial banking	42
522130	Credit unions	8
522220	Sales financing	2
522291	Consumer lending	5
522292	Real estate credit	8
522298	All other nondepository credit intermediation	5
522310	Mortgage and nonmortgage loan brokers	6
522320	Financial transactions processing, reserve, and clearinghouse activities	2
522390	Other activities related to credit intermediation	7
523120	Securities brokerage	13
523910	Miscellaneous intermediation	2
523920	Portfolio management	13
523930	Investment advice	5
524113	Direct life insurance carriers	13
524114	Direct health and medical insurance carriers	11
524126	Direct property and casualty insurance carriers	20
524210	Insurance agencies and brokerages	72
524291	Claims adjusting	2
524292	Third party administration of insurance and pension funds	2

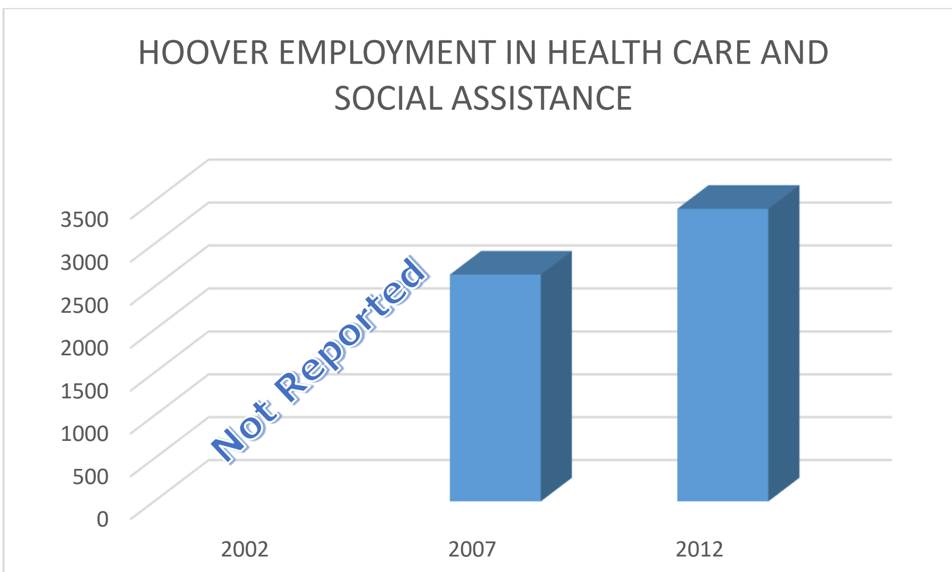




Number Of Education Services Entities 2012

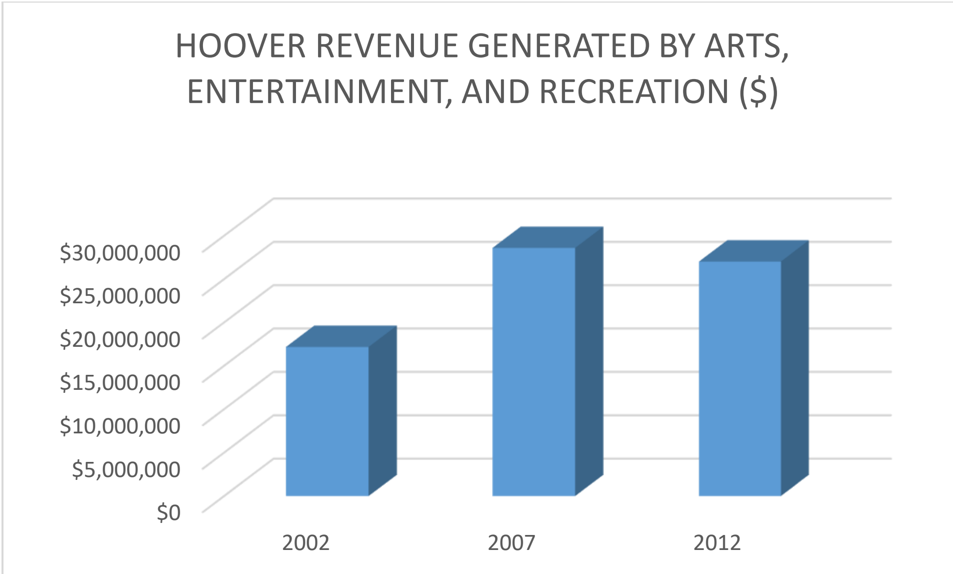
611420	Computer training	2
611430	Professional and management development training	3
611511	Cosmetology and barber schools	2
611519	Other technical and trade schools	1
611610	Fine arts schools	7
611620	Sports and recreation instruction	4
611691	Exam preparation and tutoring	6
611699	All other miscellaneous schools and instruction	1
611710	Educational support services	2

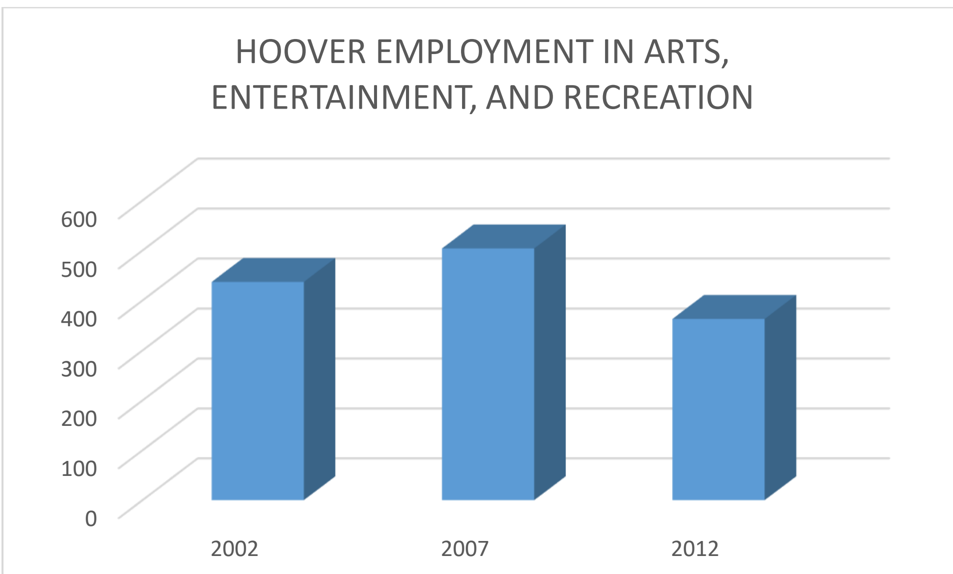

HOOVER REVENUE GENERATED BY HEALTH CARE AND SOCIAL ASSISTANCE ($)
$280,000,000
$270,000,000
$260,000,000
$250,000,000
$240,000,000
$230,000,000
$220,000,000
Not Reported
2002
2007
2012


HOOVER EMPLOYMENT IN HEALTH CARE AND SOCIAL ASSISTANCE
3500
3000
2500
2000
1500
1000
500
0
Not Reported
2002
2007
2012

Number Of Health Care And Human Services Entities 2012

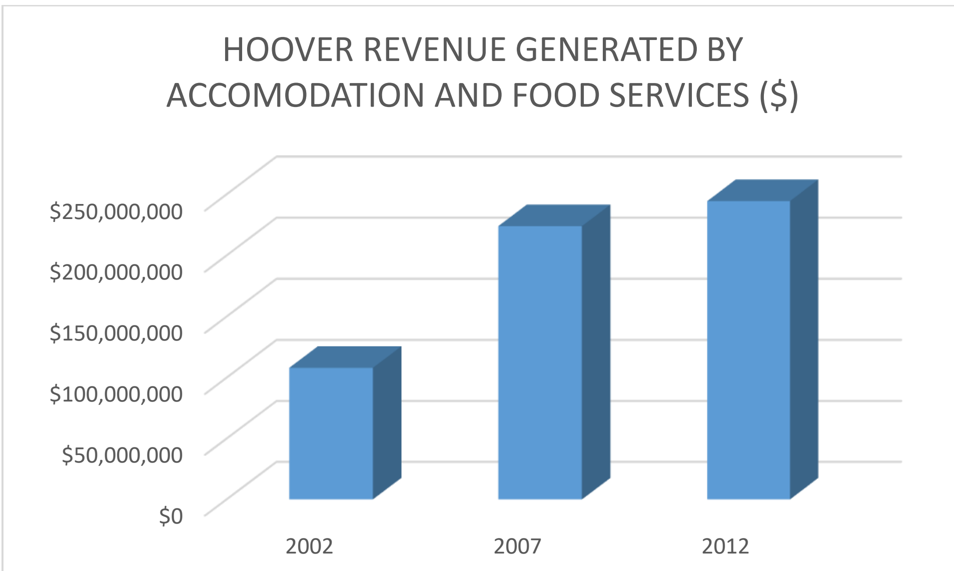
621111	Offices of physicians (except mental health specialists)	55
621112	Offices of physicians, mental health specialists	3
621210	Offices of dentists	57
621310	Offices of chiropractors	12
621320	Offices of optometrists	11
621330	Offices of mental health practitioners (except physicians)	5
621340	Offices of physical, occupational and speech therapists, and audiologists	15
621391	Offices of podiatrists	1
621399	Offices of all other miscellaneous health practitioners	5
621420	Outpatient mental health and substance abuse centers	1
621492	Kidney dialysis centers	1
621493	Freestanding ambulatory surgical and emergency centers	2
621498	All other outpatient care centers	2
621511	Medical laboratories	1
621512	Diagnostic imaging centers	3
621610	Home health care services	8
621910	Ambulance services	1
621999	All other miscellaneous ambulatory health care services	8
623110	Nursing care facilities (skilled nursing facilities)	4
623220	Residential mental health and substance abuse facilities	2
623311	Continuing care retirement communities	2
623312	Assisted living facilities for the elderly	4
624110	Child and youth services	2
624120	Services for the elderly and persons with disabilities	5
624190	Other individual and family services	3
624230	Emergency and other relief services	1
624410	Child day care services	15

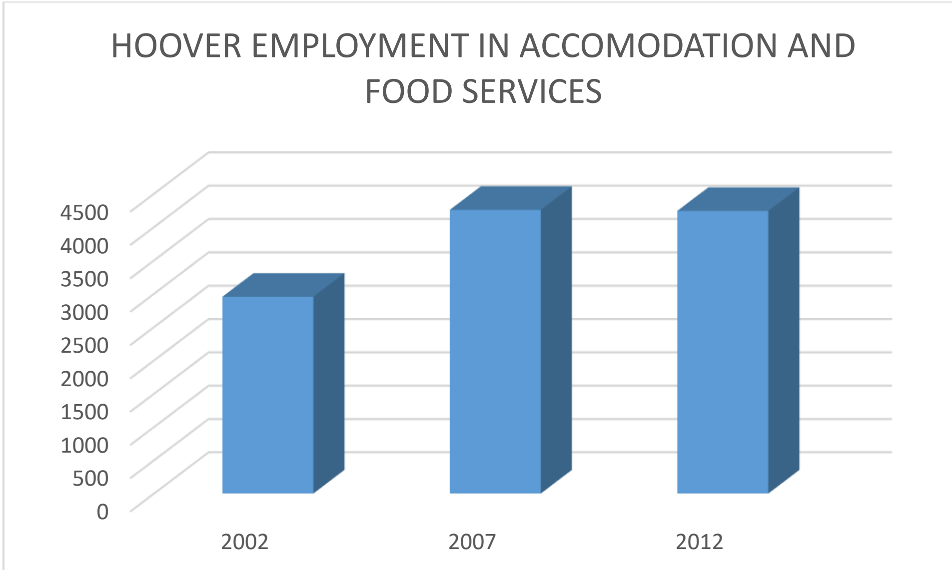

HOOVER REVENUE GENERATED BY ARTS, ENTERTAINMENT, AND RECREATION ($)
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$0
2002
2007
2012


HOOVER EMPLOYMENT IN ARTS, ENTERTAINMENT, AND RECREATION
600
500
400
300
200
100
0
2002
2007
2012

Number Of Arts, Entertainment, And Recreation Entities 2012

711110	Theater companies and dinner theaters	2
711130	Musical groups and artists	1
711219	Other spectator sports	1
711320	Promoters of performing arts, sports, and similar events without facilities	2
712130	Zoos and botanical gardens	1
713120	Amusement arcades	1
713910	Golf courses and country clubs	4
713940	Fitness and recreational sports centers	14
713990	All other amusement and recreation industries	3



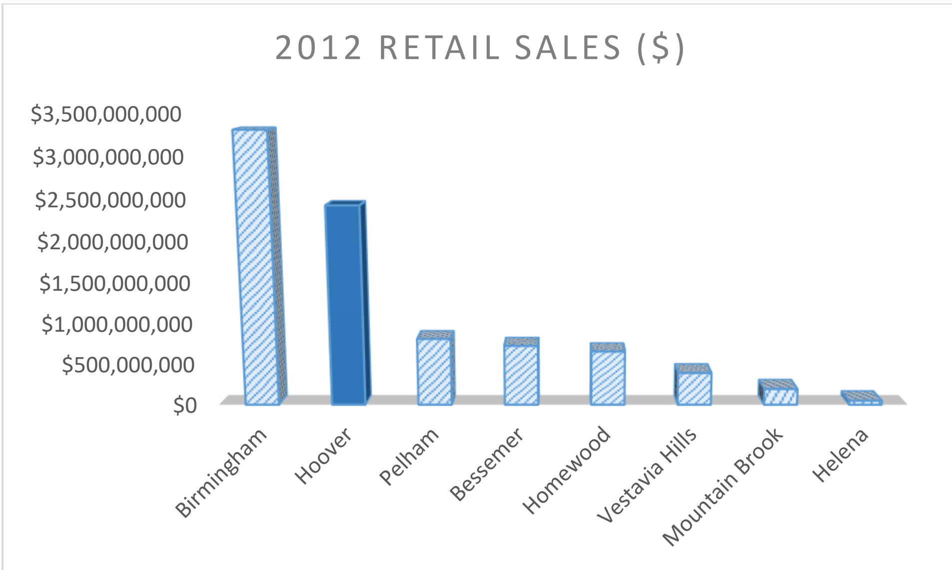


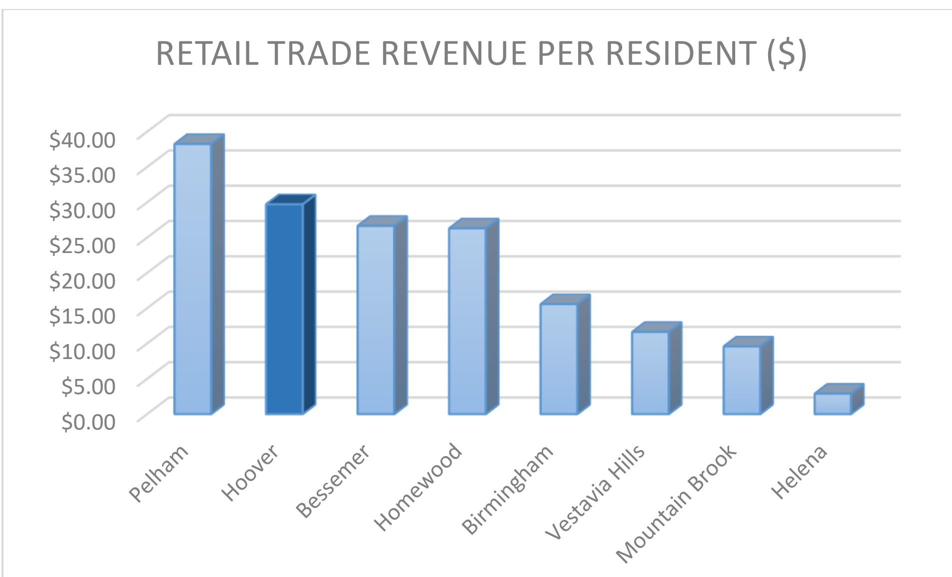
Number Of Accommodation And Food Services Entities 2012

721110	Hotels (except casino hotels) and motels	19
722310	Food service contractors	7
722320	Caterers	2
722330	Mobile food services	2
722410	Drinking places (alcoholic beverages)	5
722511	Full-service restaurants	70
722513	Limited-service restaurants	66
722514	Cafeterias, grill buffets, and buffets	2
722515	Snack and nonalcoholic beverage bars	14

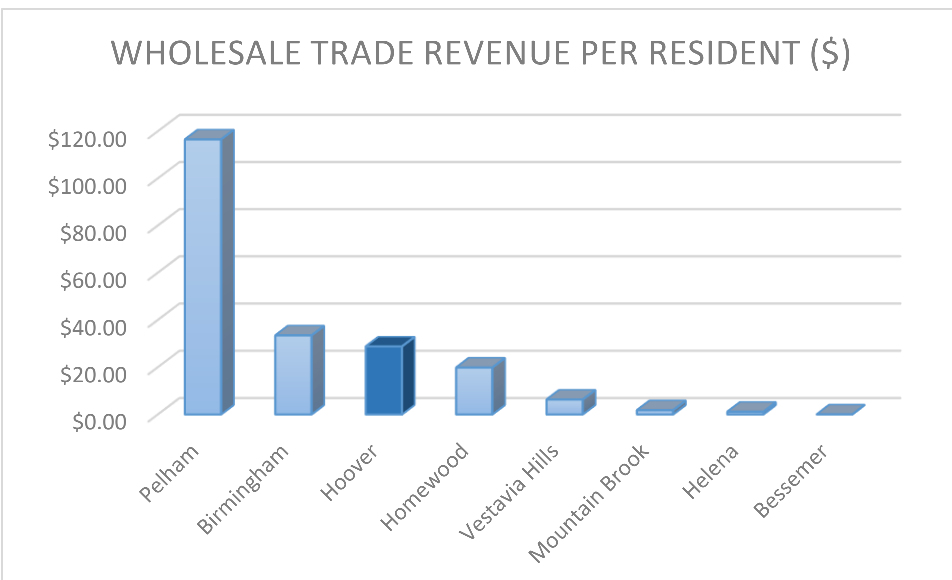
The Economy of Hoover Compared to Surrounding Cities

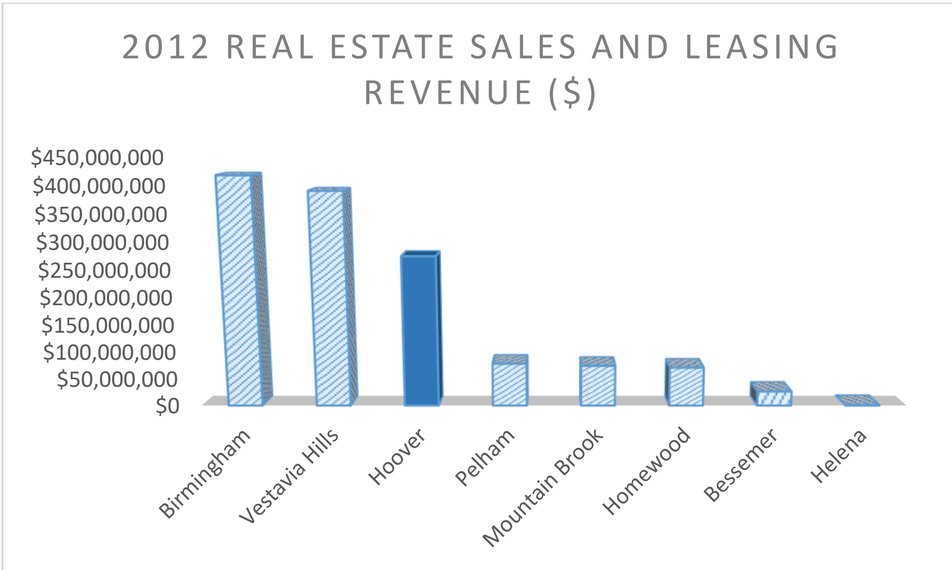
Sectors of Hoover's economy relative to those of its surrounding cities is shown in the charts below. In most cases, Hoover is second to Birmingham in economic activity. However, when considered on a per-resident basis, Hoover's performance varies widely relative to its neighboring cities.

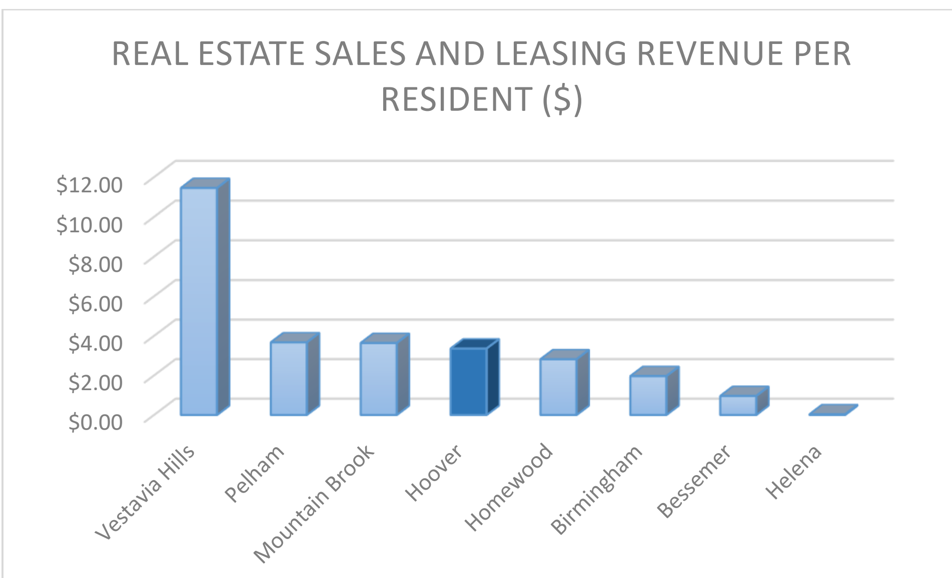


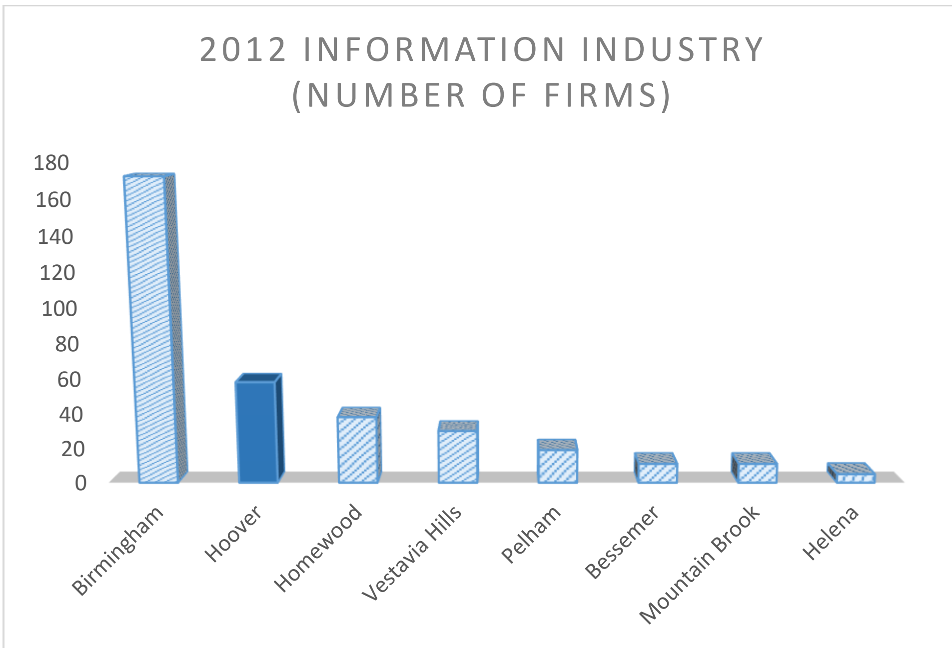


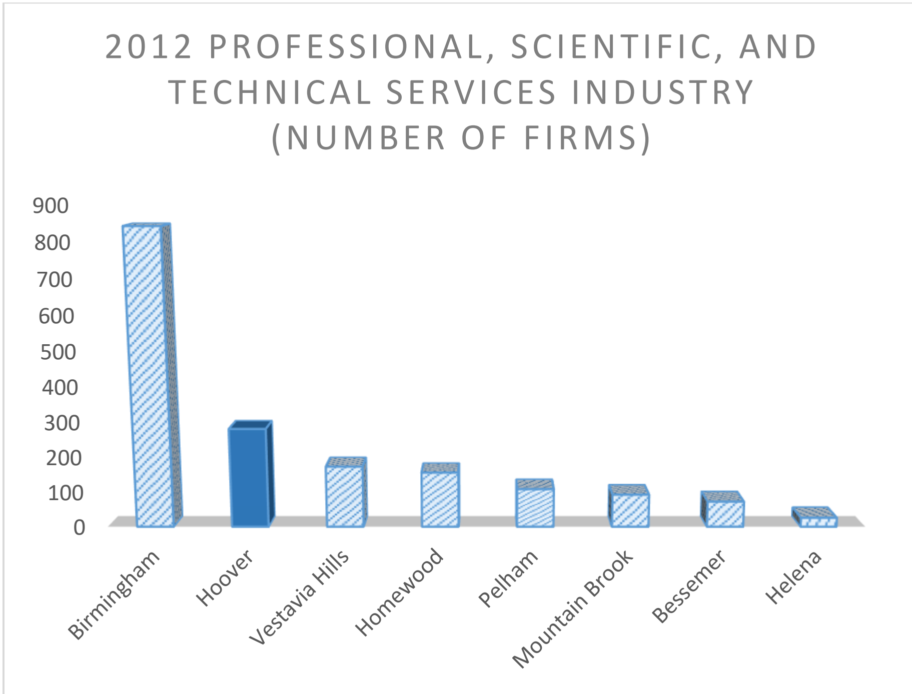

2012 WHOLESALE TRADE ($)
$8,000,000,000
$7,000,000,000
$6,000,000,000
$5,000,000,000
$4,000,000,000
$3,000,000,000
$2,000,000,000
$1,000,000,000
$0
Birmingham
Pelham
Hoover
Homewood
Vestavia Hills
Mountain Brook
Helena
Bessemer

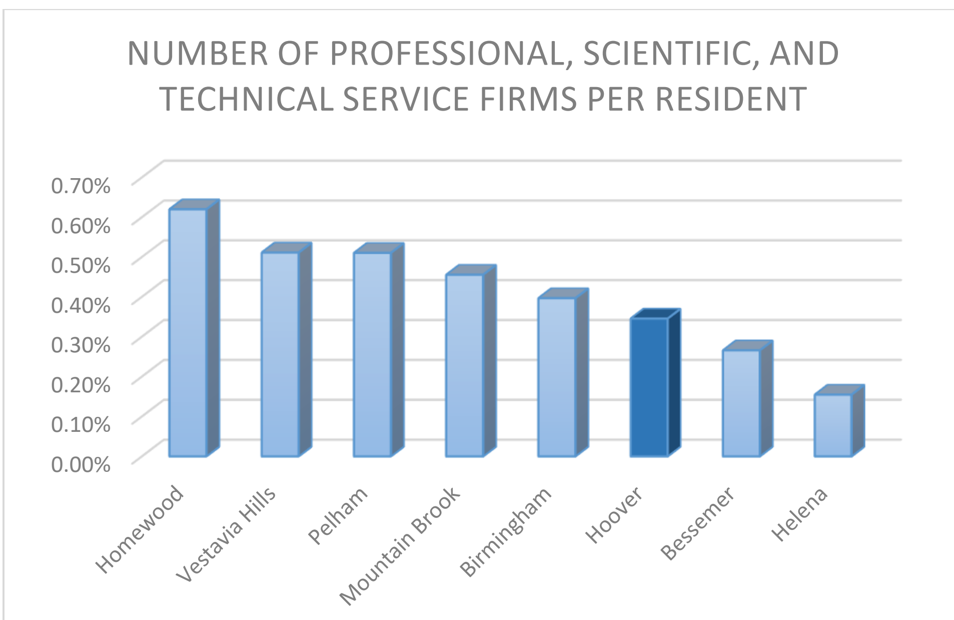

WHOLESALE TRADE REVENUE PER RESIDENT ($)
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Pelham
Birmingham
Hoover
Homewood
Vestavia Hills
Mountain Brook
Helena
Bessemer

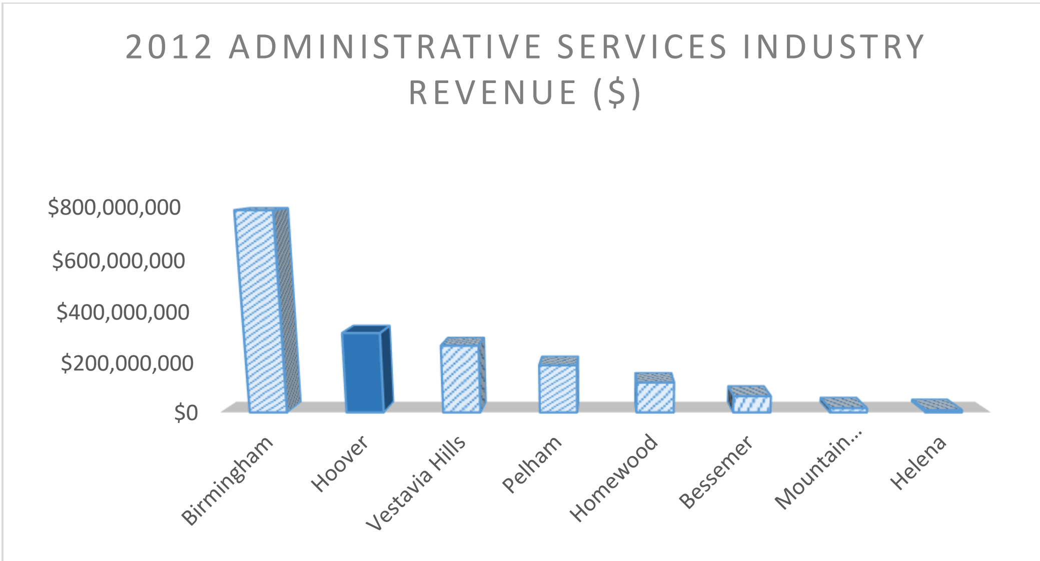

2012 REAL ESTATE SALES AND LEASING REVENUE ($)
$450,000,000
$400,000,000
$350,000,000
$300,000,000
$250,000,000
$200,000,000
$150,000,000
$100,000,000
$50,000,000
$0
Birmingham
Vestavia Hills
Hoover
Pelham
Mountain Brook
Homewood
Bessemer
Helena

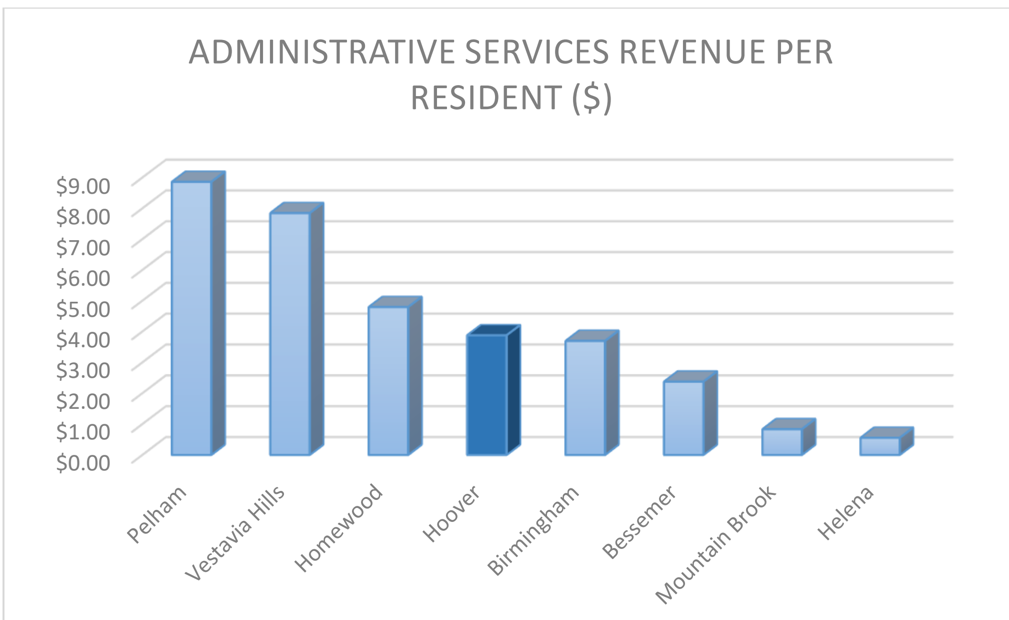

REAL ESTATE SALES AND LEASING REVENUE PER RESIDENT ($)
$12.00
$10.00
$8.00
$6.00
$4.00
$2.00
$0.00
Vestavia Hills
Pelham
Mountain Brook
Hoover
Homewood
Birmingham
Bessemer
Helena

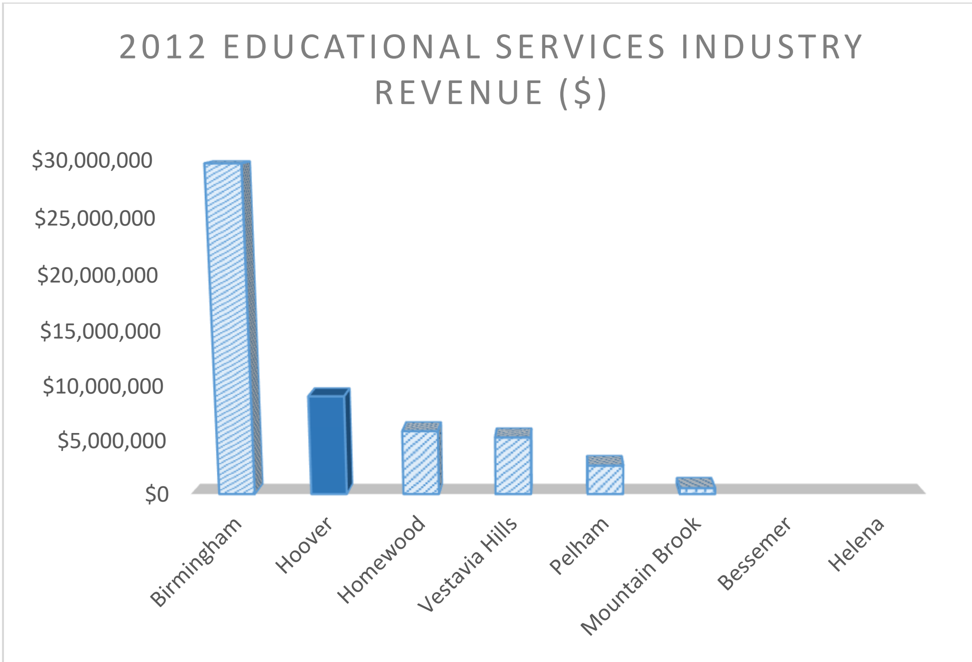

2012 INFORMATION INDUSTRY
(NUMBER OF FIRMS)
180
160
140
120
100
80
60
40
20
0
Birmingham
Hoover
Homewood
Vestavia Hills
Pelham
Bessemer
Mountain Brook
Helena

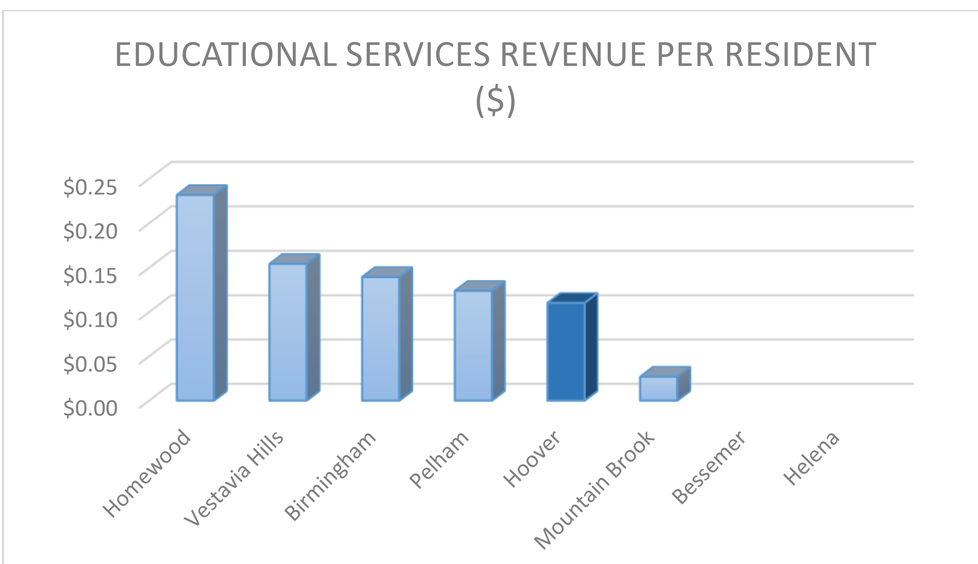

2012 PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES INDUSTRY (NUMBER OF FIRMS)
900
800
700
600
500
400
300
200
100
0
Birmingham
Hoover
Vestavia Hills
Homewood
Pelham
Mountain Brook
Bessemer
Helena

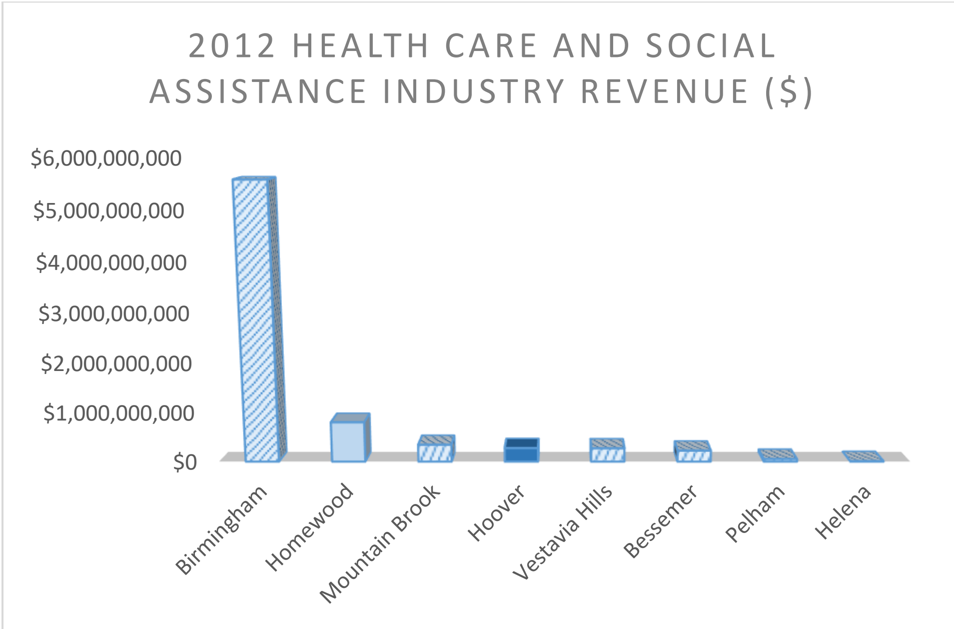

NUMBER OF PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICE FIRMS PER RESIDENT
0.70%
0.60%
0.50%
0.40%
0.30%
0.20%
0.10%
0.00%
Homewood
Vestavia Hills
Pelham
Mountain Brook
Birmingham
Hoover
Bessemer
Helena

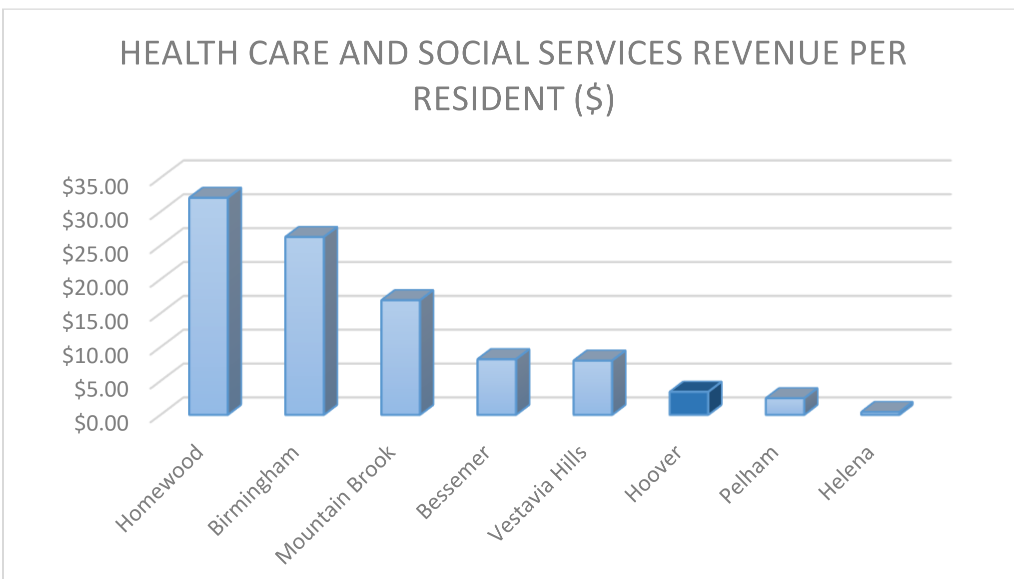

2012 ADMINISTRATIVE SERVICES INDUSTRY REVENUE ($)
$800,000,000
$600,000,000
$400,000,000
$200,000,000
$0
Birmingham
Hoover
Vestavia Hills
Pelham
Homewood
Bessemer
Mountain...
Helena

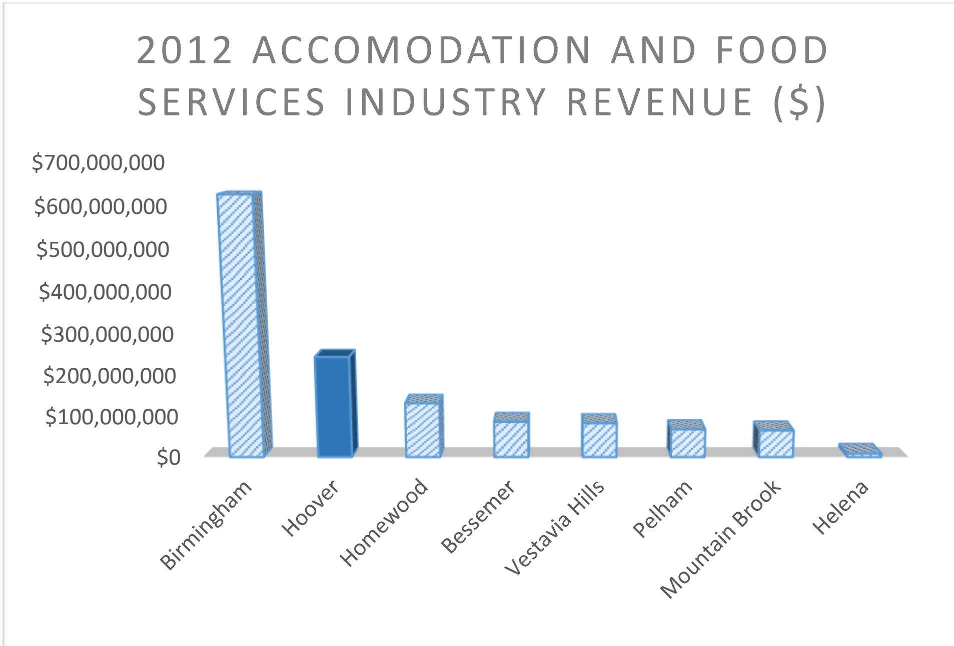

ADMINISTRATIVE SERVICES REVENUE PER RESIDENT ($)
$9.00
$8.00
$7.00
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
Pelham
Vestavia Hills
Homewood
Hoover
Birmingham
Bessemer
Mountain Brook
Helena

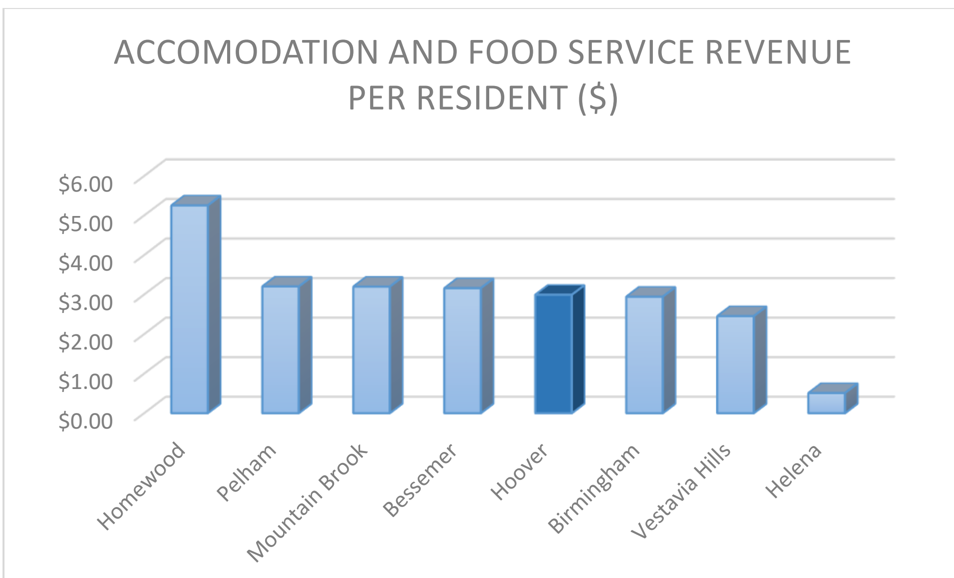

2012 EDUCATIONAL SERVICES INDUSTRY REVENUE ($)
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$0
Birmingham
Hoover
Homewood
Vestavia Hills
Pelham
Mountain Brook
Bessemer
Helena

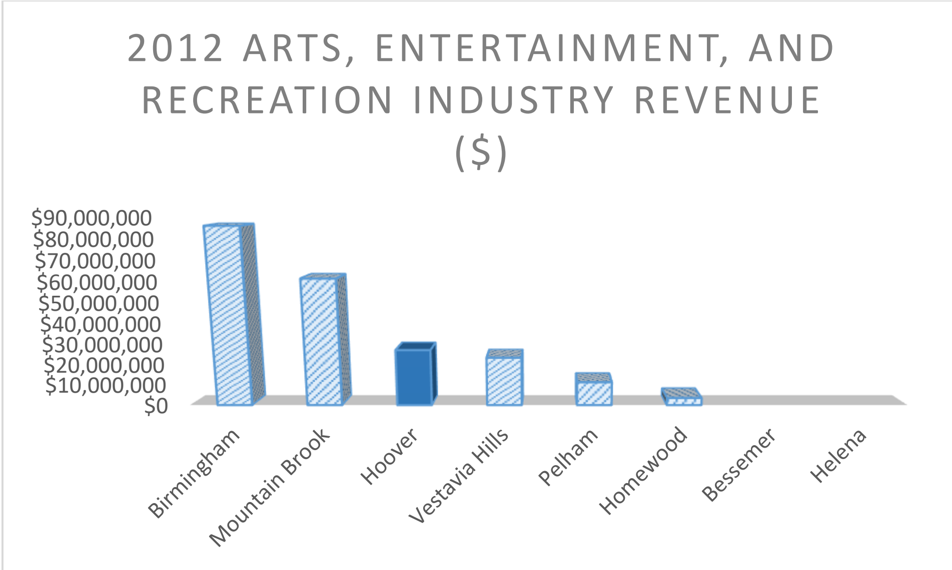

EDUCATIONAL SERVICES REVENUE PER RESIDENT ($)
$0.25
$0.20
$0.15
$0.10
$0.05
$0.00
Homewood
Vestavia Hills
Birmingham
Pelham
Hoover
Mountain Brook
Bessemer
Helena

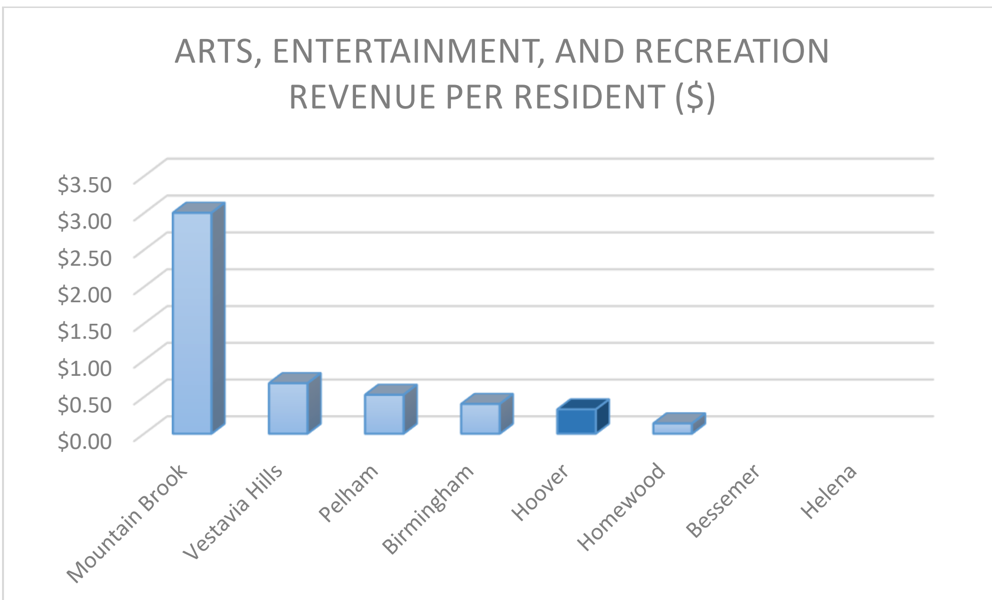

2012 HEALTH CARE AND SOCIAL ASSISTANCE INDUSTRY REVENUE ($)
$6,000,000,000
$5,000,000,000
$4,000,000,000
$3,000,000,000
$2,000,000,000
$1,000,000,000
$0
Birmingham
Homewood
Mountain Brook
Hoover
Vestavia Hills
Bessemer
Pelham
Helena


HEALTH CARE AND SOCIAL SERVICES REVENUE PER RESIDENT ($)
$35.00
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
Homewood
Birmingham
Mountain Brook
Bessemer
Vestavia Hills
Hoover
Pelham
Helena


2012 ACCOMODATION AND FOOD SERVICES INDUSTRY REVENUE ($)
$700,000,000
$600,000,000
$500,000,000
$400,000,000
$300,000,000
$200,000,000
$100,000,000
$0
Birmingham
Hoover
Homewood
Bessemer
Vestavia Hills
Pelham
Mountain Brook
Helena


ACCOMODATION AND FOOD SERVICE REVENUE PER RESIDENT ($)
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
Homewood
Pelham
Mountain Brook
Bessemer
Hoover
Birmingham
Vestavia Hills
Helena


2012 ARTS, ENTERTAINMENT, AND RECREATION INDUSTRY REVENUE ($)
$90,000,000
$80,000,000
$70,000,000
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
Birmingham
Mountain Brook
Hoover
Vestavia Hills
Pelham
Homewood
Bessemer
Helena

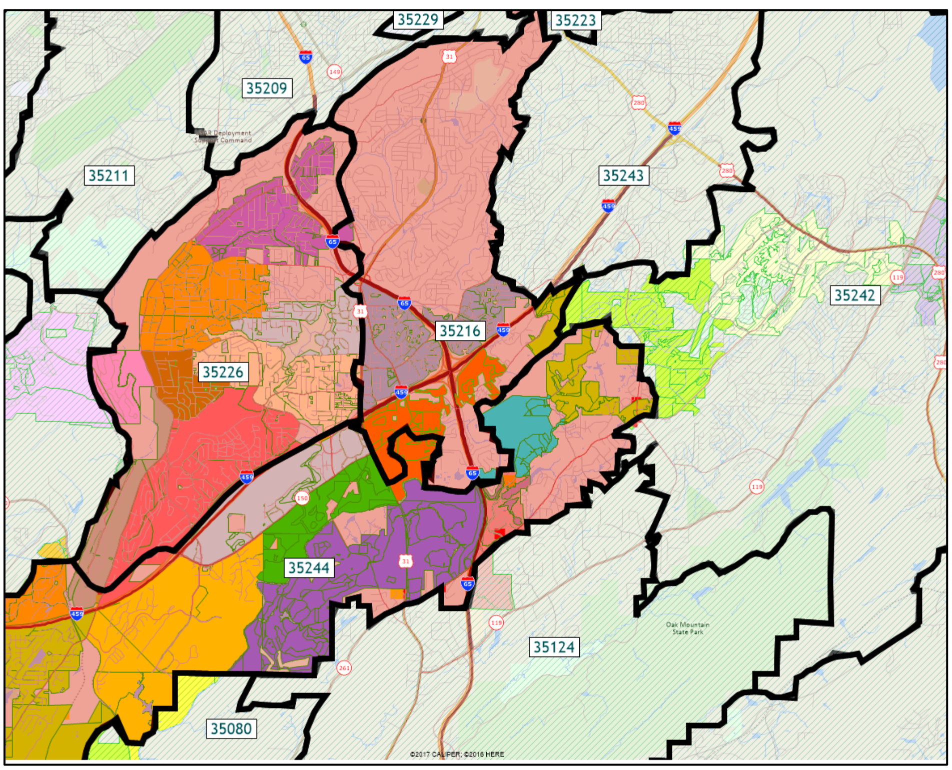

ARTS, ENTERTAINMENT, AND RECREATION REVENUE PER RESIDENT ($)
$3.50
$3.00
$2.50
$2.00
$1.50
$1.00
$0.50
$0.00
Mountain Brook
Vestavia Hills
Pelham
Birmingham
Hoover
Homewood
Bessemer
Helena

Economic Growth Changes 2012 – 2015 by Zip Code

Growth between 2012 and 2015 (the last year in which data are available) in Hoover's ZIP Codes is computed by the US Census Bureau's County Business Patterns, but only the number of businesses and number of employees are reported.

The four main Zip Codes comprising Hoover are 35216 (the Lorna Road and Eastern side of US 31 and along Old Rocky Ridge Road), 35226 (the Western side of US 31 to Hoover's northern boundary and north of I-459 including the Grove and Preserve), 35244 (from far southwest Hoover through Riverchase and east of I-65, including the Galleria vicinity), and 35242 (north and south of US 280 including Altadena, Inverness, and Greystone. Of these, only 35226 and 35244 are mostly inside Hoover.

Of these, ZIP's 35216 and 35226 appear stable or slightly shrinking numbers of business and employees, while 35242 and 35244 show steady increases. More detailed figures will be generated from the 2017 Economic Census in late 2019.

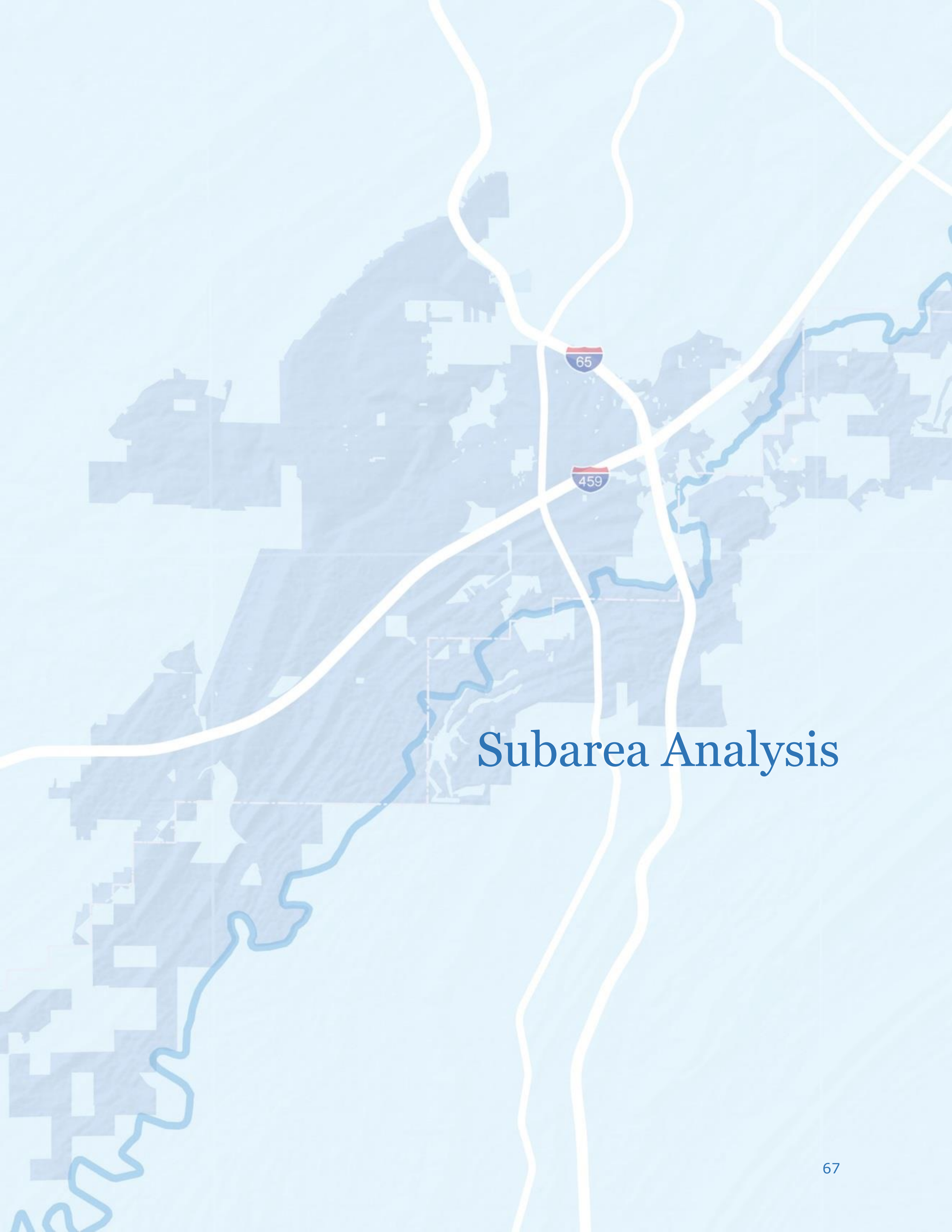


Hoover's Major Zip Codes

Economic Growth Changes 2012 – 2015 (Continued)

Business Growth by ZIP Code, 2007-2015

ZIP CODE	YEAR	ESTABLISHMENTS	EMPLOYEES
35216	2007 2012 2015	1,097 1,041 1,063	14,950 13,714 13,675
35226	2007 2012 2015	425 440 487	3,489 4,569 4,179
35242	2007 2012 2015	1,399 1,449 1,573	21,916 23,956 26,760
35244	2007 2012 2015	1,391 1,389 1,404	27,817 30,515 31,647

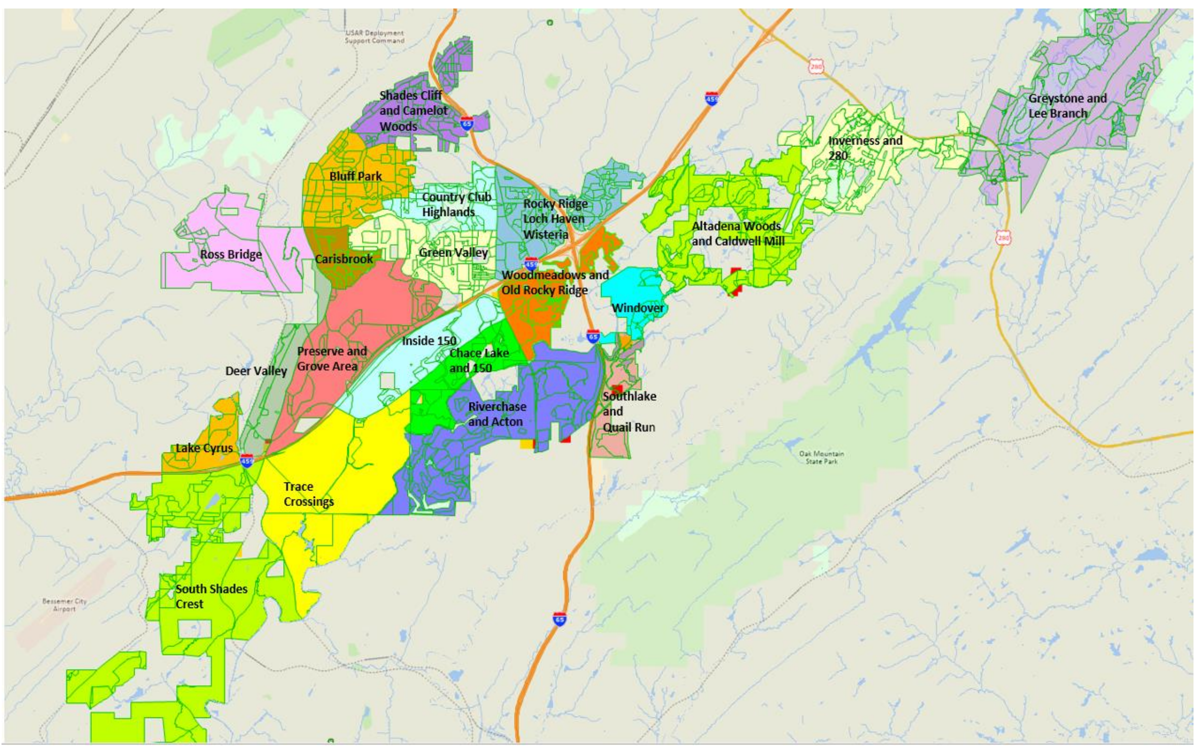


Subarea Analysis

Dividing Hoover into Subareas for Analysis

The City of Hoover has evolved from a series of independent neighborhood groupings into a single entity, but to a large extent each subarea has retained much of its individual personality, with different demographic characteristics, history, and growth potential. The map below shows the twenty-one subareas developed for this study.

These Hoover Analysis Subareas were built using Hoover neighborhood maps, Census Block Group Boundaries, and individual Census Block maps and data. Census Block data from the 2010 US Census were used to build up the population and housing unit counts for the Analysis Subareas. Where Analysis Subareas cross Census Block Group boundaries, the characteristics of the Analysis Subarea are estimated based on the percentage of the Block Group that the Analysis Subarea comprises. The boundaries do not necessarily correspond with the exact boundaries of the Hoover neighborhoods but are similar and consistent.



Hoover’s Subareas for Economic Analysis

Population and Growth of Hoover Subareas 2010-2017

Hoover Analysis Subareas as of 2010 Census

Hoover Area Grouping	Analysis Areas	2010 Census Housing Units	2010 Census Population
Greystone and 280	Greystone and Lee Branch	3,189	7,438
	Inverness and 280	1,268	2,055
Northeast	Altadena Woods and Caldwell Mill	1,197	2,966
North Central	Loch Haven Rocky Ridge Wisteria	3,545	7,314
Central	Woodmeadows and Old Rocky Ridge Rd	4,175	8,580
Southeast	Quail Run and Southlake	615	1,299
	Windover	357	1,078
South	Riverchase and Acton	3,145	6,970
Old Hoover North	Bluff Park	1,730	4,221
	Carisbrook	669	1,661
	Country Club Highlands	916	2,146
	Green Valley	1,550	3,634
	Shades Cliff and Camelot Woods	2,200	4,615
Northwest	Deer Valley	800	1,889
	Lake Cyrus	667	1,875
	Preserve and Grove Area	2,260	5,948
	Ross Bridge	743	1,886
One Fifty	Chace Lake and 150	1,901	3,425
	Inside 150	894	1,698
Southwest	South Shades Crest	2,359	7,145
	Trace Crossings	1,064	3,074

Source: 2010 US Census of Population and Housing, Block Data

Estimated Population By Subarea End-Of-Year 2017

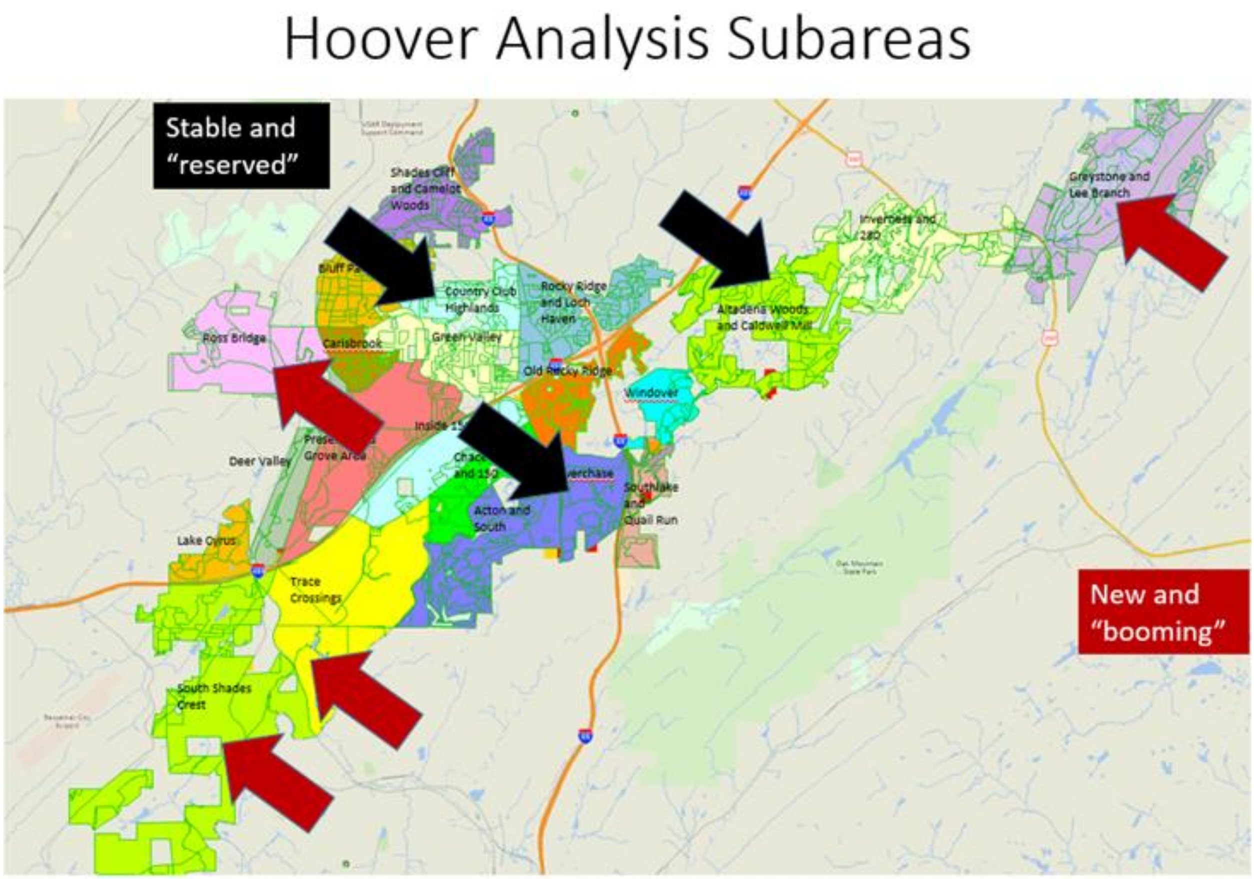
Analysis Area	Housing Units 2010 Census	Population 2010 Census	Growth in Housing Units since 2010	Average No. of Persons per Household 2010 Census	Estimated Population Growth 2010 - 2017	Estimated Population 2017
Greystone and Lee Branch	3,189	7,438	57	2.29	131	7,569
Inverness and 280	1,268	2,055	63	1.61	101	2,156
Altadena Woods and Caldwell Mill	1,197	2,966	198	2.46	487	3,453
Loch Haven Rocky Ridge Wisteria	3,545	7,314	0	2.06	0	7,314
Woodmeadows and Old Rocky Ridge Road	4,175	8,580	0	2.05	0	8,580
Quail Run and Southlake	615	1,299	127	2.11	268	1,567
Windover	357	1,078	0	2.99	0	1,078
Riverchase and Acton	3,145	6,970	4	2.3	9	6,979
Bluff Park	1,730	4,221	0	2.44	0	4,221
Carisbrook	669	1,661	0	2.48	0	1,661
Country Club Highlands	916	2,146	0	2.34	0	2,146
Green Valley	1,550	3,634	7	2.34	17	3,651
Shades Cliff Camelot Woods	2,200	4,615	13	2.1	27	4,642
Deer Valley	800	1,889	50	2.36	118	2,007
Lake Cyrus	667	1,875	285	2.81	801	2,676
Preserve and Grove	2,260	5,948	366	2.63	963	6,911
Ross Bridge	743	1,886	1,227	2.54	3,115	5,001
Chace Lake and 150	1,901	3,425	166	1.8	299	3,724
Inside 150	894	1,698	15	1.9	28	1,726
South Shades Crest	2,359	7,145	72	3.02	217	7,362
Trace Crossings	1,064	3,074	208	2.89	601	3,675
Totals					6,579	87,496

(7,182 at 91.6% Occupancy)

Source: 2010 US Census of Population and Housing, Block Data,
City of Hoover Housing Data 2017

Characteristics of Hoover Subareas

As shown in the map below, the City of Hoover can be visualized as a set of integrated subareas, many of which can be characterized as stable and reserved with most homes built before 2000. These areas are the old, established communities with aging populations mixed with newly arriving families drawn to the schools and the diversity of the area. Around the outer edges of Hoover, new and booming neighborhoods are attracting young families with much higher levels of economic resources.



Source: US Census of Population and Housing 2010, Hoover Housing Data, Permits and Residence Complete 2010-2017

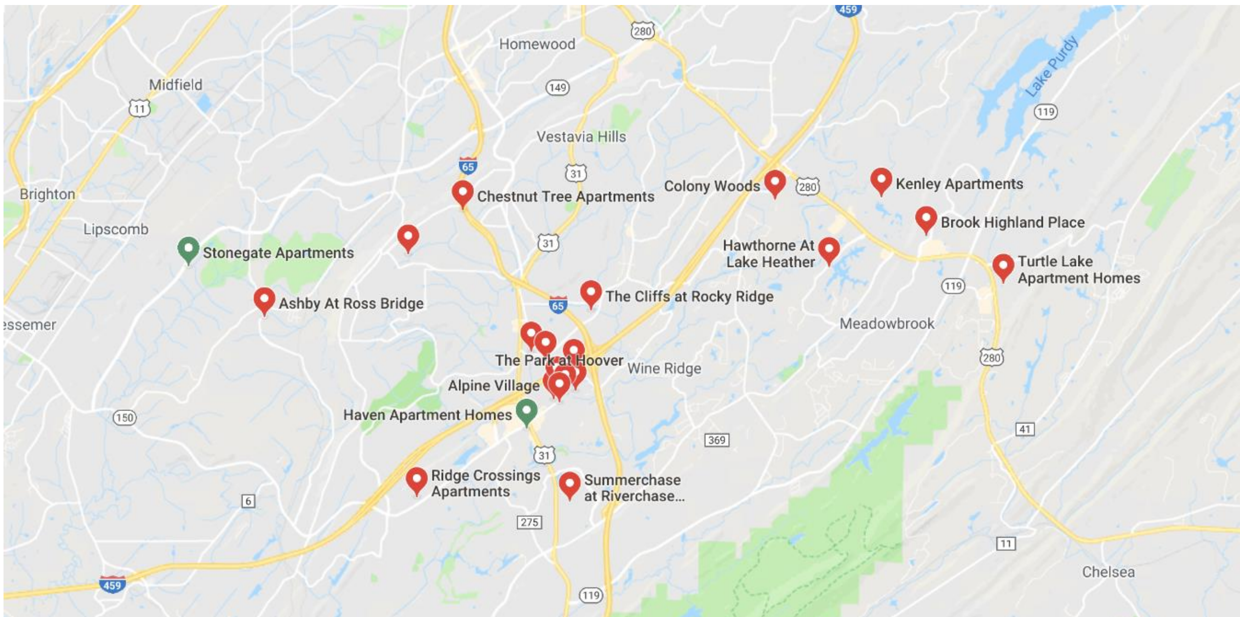
Economic Characteristics of Hoover Subareas

As shown below, the subareas of Hoover with the lowest concentrations of apartment residences tend to be those with the highest household incomes, and vice versa. The older subareas of Hoover also tend to have lower overall household incomes compared to the newer, high growth neighborhoods around the northeastern and southwestern edges of the city.

Economic Profile of Hoover Analysis Subareas

Analysis Area	2010 Census Population	Median Income per Housing Unit in 2010	Percent of Population in Rental Housing
Greystone and Lee Branch	7,438	$130,263	14.81%
Inverness and 280	2,055	$68,567	45.91%
Altadena Woods and Caldwell Mill	2,966	$100,623	15.67%
Loch Haven Rocky Ridge Wisteria	7,314	$49,447	50.31%
Woodmeadows and Old Rocky Ridge Rd	8,580	$45,946	84.06%
Quail Run and Southlake	1,299	$93,523	3.87%
Windover	1,078	$108,859	2.38%
Riverchase and Acton	6,970	$88,450	29.62%
Bluff Park	4,221	$85,473	9.49%
Carisbrook	1,661	$107,067	6.35%
Country Club Highlands	2,146	$84,755	18.52%
Green Valley	3,634	$79,140	11.75%
Shades Cliff and Camelot Woods	4,615	$54,329	44.94%
Deer Valley	1,889	$78,143	9.82%
Lake Cyrus	1,875	$87,500	8.51%
Preserve and Grove Area	5,948	$103,366	5.01%
Ross Bridge	1,886	$75,482	31.52%
Chace Lake and 150	3,425	$58,288	94.00%
Inside 150	1,698	$48,101	78.95%
South Shades Crest	7,145	$109,405	4.39%
Trace Crossings	3,074	$142,261	1.72%

Source: US Census of Population and Housing 2010



Major Concentrations of Apartment Complexes
Source: Google Maps

School Enrollment Estimates by Subarea

Hoover’s subareas also differ greatly in terms of estimated school enrollment figures. Although largely based on differences in population, the subareas also differ based on the age and income of the population, with younger and wealthier areas having, on average, a higher percentage of student-aged children.

Estimated School Enrollment 2017 By Analysis Subarea

	PREPRIMARY AND KINDERGARTEN			
Analysis Area	Enrolled Public Preprimary	Enrolled Private Preprimary	Enrolled Public Kindergarten	Enrolled Private Kindergarten
Greystone and Lee Branch	13	104	77	64
Inverness and 280	45	61	57	4
Altadena Woods Caldwell Mill	9	87	-	48
Windover	-	23	-	12
Quail Run Southlake	-	21	10	12
Riverchase and Acton	0	105	48	36
Old Rocky Ridge Rd	42	102	214	-
Loch Haven and Rocky Ridge	-	62	177	29
Bluff Park	35	165	35	13
Carisbrook	13	9	24	3
Country Club Highlands	26	60	17	2
Shades Cliff Camelot Woods	5	112	164	19
Green Valley	4	60	3	22
Preserve and Grove Area	36	165	94	26
Ross Bridge	5	57	37	5
Deer Valley	13	113	13	44
Lake Cyrus	-	120	-	-
Chace Lake and 150	-	48	54	4
Inside 150	16	-	15	-
Trace Crossings	60	26	145	-
South Shades Crest	32	174	129	0
2107 Estimate	355	1,676	1,313	344
2010 Census	337	1,516	1,272	320

Source: 2010 US Census of Population, American Community Survey, Estimates based on Hoover Housing Data 2010-2017

Estimated School Enrollment 2017 By Analysis Subarea

				Grades 1 to 8
Analysis Area	Enrolled Public Grades 1-4	Enrolled Private Grades 1-4	Enrolled Public Grades 5-8	Enrolled Private Grades 5-8
Greystone and Lee Branch	313	117	301	227
Inverness and 280	112	17	128	7
Altadena Woods Caldwell Mill	217	127	135	81
Windover	24	34	31	6
Quail Run Southlake	116	47	56	10
Riverchase and Acton	199	33	231	4
Old Rocky Ridge Rd	395	33	310	32
Loch Haven and Rocky Ridge	476	69	319	38
Bluff Park	450	6	159	17
Carisbrook	159	0	89	14
Country Club Highlands	105	26	18	10
Shades Cliff Camelot Woods	207	23	190	16
Greeen Valley	180	13	146	2
Preserve and Grove Area	95	55	279	31
Ross Bridge	53	7	81	8
Deer Valley	46	61	47	24
Lake Cyrus	395	-	304	21
Chace Lake and 150	114	-	140	-
Inside 150	58	-	100	-
Trace Crossings	274	-	288	-
South Shades Crest	471	52	776	65
2017 Estimate	4,459	720	4,128	613
2010 Census	4,049	669	3,755	570

Source: 2010 US Census of Population, American Community Survey, Estimates based on Hoover Housing Data 2010-2017

Estimated School Enrollment 2017 By Analysis Subarea

	Grades 9 to 12	
Analysis Area	Enrolled Public Grades 9-12	Enrolled Private Grades 9-12
Greystone and Lee Branch	311	204
Inverness and 280	120	22
Altadena Woods Caldwell Mill	70	28
Windover	59	26
Quail Run Southlake	118	2
Riverchase and Acton	274	74
Old Rocky Ridge Rd	102	32
Loch Haven and Rocky Ridge	273	47
Bluff Park	139	33
Carisbrook	58	12
Country Club Highlands	48	42
Shades Cliff Camelot Woods	164	7
Green Valley	58	21
Preserve and Grove Area	294	38
Ross Bridge	70	25
Deer Valley	141	-
Lake Cyrus	431	-
Chace Lake and 150	126	42
Inside 150	-	-
Trace Crossings	263	11
South Shades Crest	556	83
2017 Estimate	3,674	748
2010 Census	3,233	726

Source: 2010 US Census of Population, American Community Survey, Estimates based on Hoover Housing Data 2010-2017

Forecasting the Future Population of Hoover Subareas

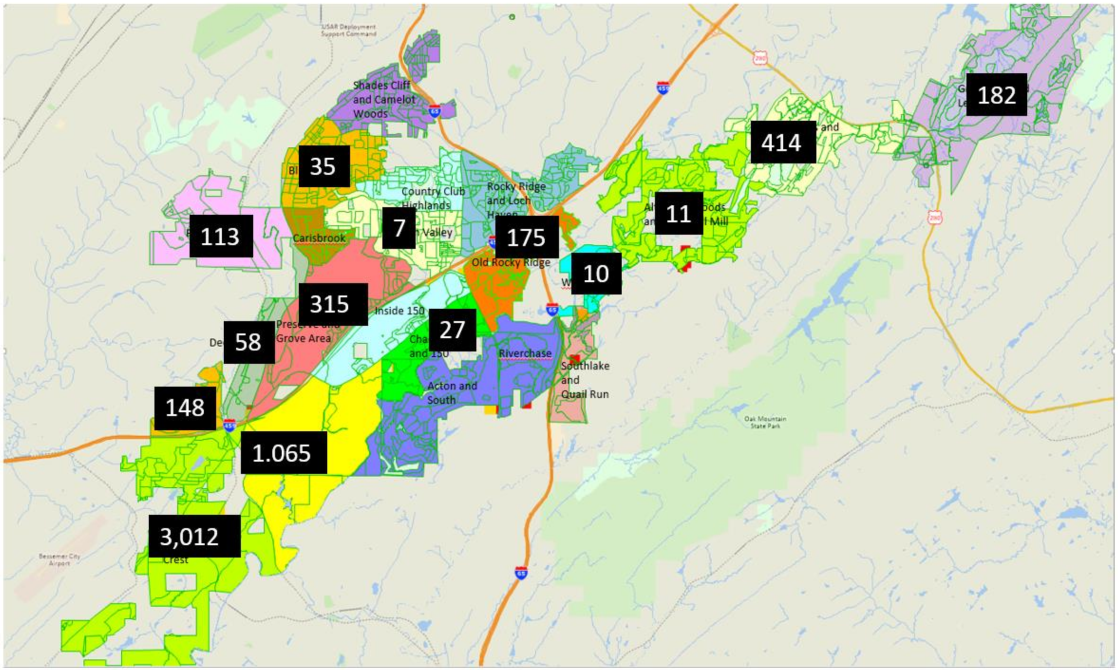
City of Hoover Building Inspection data is the basis for forecasting growth of Hoover Subareas, which is then summed to use as the basis of an estimate of the population of hoover through 2050.

HOOVER RESIDENTIAL GROWTH AND FORECAST BY ANALYSIS SUBAREA

Analysis Area	Total Approved since 2006	Total Built by End-of-Year December 2017	Future Approved Housing Units past 2017
Greystone And Lee Branch	3,060	2,878	182
Inverness And 280	1,564	1,150	414
Altadena Woods and Caldwell Mill	786	775	11
Windover	137	127	10
Woodmeadows and Old Rocky Ridge Road	175		175
Bluff Park	35		35
Green Valley	130	123	7
Deer Valley	108	50	58
Lake Cyrus	1,087	939	148
Preserve And Grove	855	540	315
Ross Bridge	2,480	2,257	113
Chace Lake Area	297	270	27
Inside 150	1,187	130	1,057
South Shades Crest	1,317	249	3,012
Trace Crossings	5,026	2,017	1,065
Total	18,244	11,505	6,629

Source: City of Hoover Housing Data, Permits versus Built as of EOY 2017
Note: 330 approved units in Woodmeadows Old Rocky Ridge Road area replaced by 175

Approved Housing Unit Growth past 2017



Projected Growth for Hoover to 2030 by Analysis Subarea

The table below estimates population grown for each of the Hoover's Analysis Subareas through the estimated 2030 build-out of the approved but-not-built housing units in each. This new housing growth is estimated to keep the same persons-per-household count in each subarea as the Census figures. Growth not due to new housing developments (in-fill housing on an ad-hoc basis, fewer vacant homes and apartments, or higher birth rates or persons per household) is estimated at 1.2% of the 2017 population.

Estimated Population By Analysis Subarea Beyond 2017

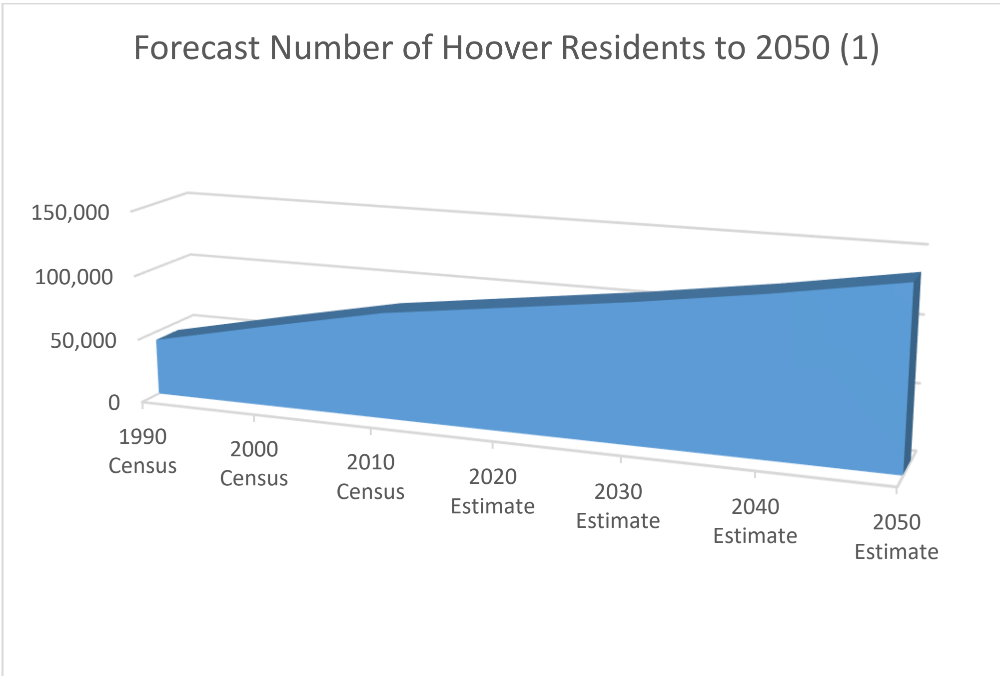
Analysis Area	Population 2010 Census	Estimated Population 2017	Estimated Population Growth from New Residences to 2030	Estimated Growth from In-fill and other to 2030	Estimated Population in 2030
Greystone and Lee Branch	7,438	7,569	439	91	8,099
Inverness and 280	2,055	2,156	835	26	3,017
Altadena Woods and Caldwell Mill	2,966	3,453	27	41	3,521
Loch Haven Rocky Ridge Wisteria	7,314	7,314	0	88	7,402
Woodmeadows and Old Rocky Ridge Road	8,580	8,580	370	103	9,053
Quail Run and Southlake	1,299	1,567	0	19	1,586
Windover	1,078	1,078	29	13	1,120
Riverchase and Acton	6,970	6,979	0	84	7,063
Bluff Park	4,221	4,221	81	51	4,353
Carisbrook	1,661	1,661	0	20	1,681
Country Club Highlands	2,146	2,146	0	26	2,172
Green Valley	3,634	3,651	17	44	3,712
Shades Cliff Camelot Woods	4,615	4,642	0	56	4,698
Deer Valley	1,889	2,007	137	24	2,168
Lake Cyrus	1,875	2,676	416	32	3,124
Preserve and Grove	5,948	6,911	737	83	7,731
Ross Bridge	1,886	5,001	283	60	5,344
Chace Lake and 150	3,425	3,724	51	45	3,820
Inside 150	1,698	1,726	2,008	21	3,755
South Shades Crest	7,145	7,362	9,096	88	16,547
Trace Crossings	3,074	3,675	3,078	44	6,797
Totals	81,619	87,496	17,604	1,057	106,157

Note: At an eventual 100% occupancy of residences built beyond 2017

Hoover Population Estimates to 2050

Straight-line Growth past 2020

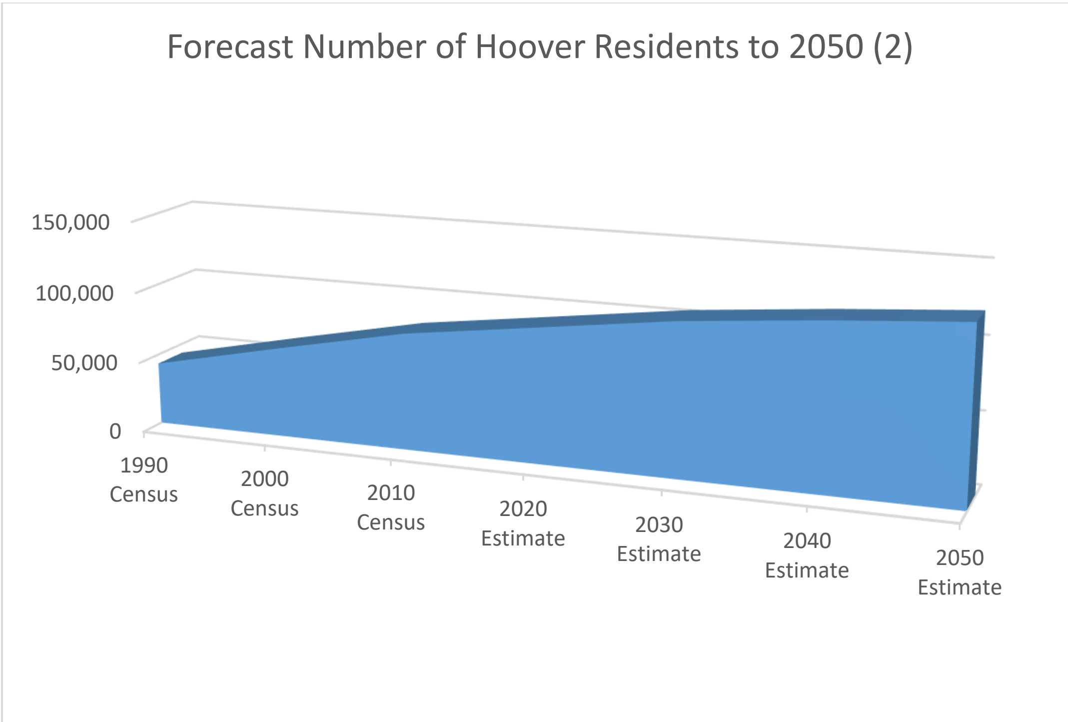
The following graph and table show the results of combining the populations of Hoover's Analysis Subareas and forecasting straight-line growth from the 2030 estimated population to a 2050 forecast population number of 135,792 residents.



Population (and Forecast Population)	Number of Residents	Percent Growth
1990 Census	43,562	
2000 Census	62,994	44.6%
2010 Census	81,619	29.6%
2020 Estimate	93,862	15.0%
2030 Estimate	**106,157**	**13.1%**
2040 Estimate	120,064	13.1%
2050 Estimate	135,792	13.1%

A more likely scenario

Hoover's growth rate is forecast to decrease after 2030 as land for new development becomes depleted, although the city is still predicted to grow faster than its landlocked neighbors to the North. In this scenario, 2050's Hoover population is estimated at 121,529.



Population (and Forecast Population)	Number of Residents	Percent Growth
1990 Census	43,562	
2000 Census	62,994	44.6%
2010 Census	81,619	29.6%
2020 Estimate	93,862	15.0%
2030 Estimate	**106,157**	**13.1%**
2040 Estimate	114,650	8.0%
2050 Estimate	121,529	6.0%

Predicted County Growth through 2040 for Jefferson and Shelby Counties

The projected growth of Hoover is in line with the table below, which estimates population grown for each of the counties comprising the City of Hoover over the next twenty-plus years. As shown, and also as captured by Hoover's recent growth patterns, the sections of Hoover located in Shelby County have much more potential for growth simply based on the amount of developable land available.

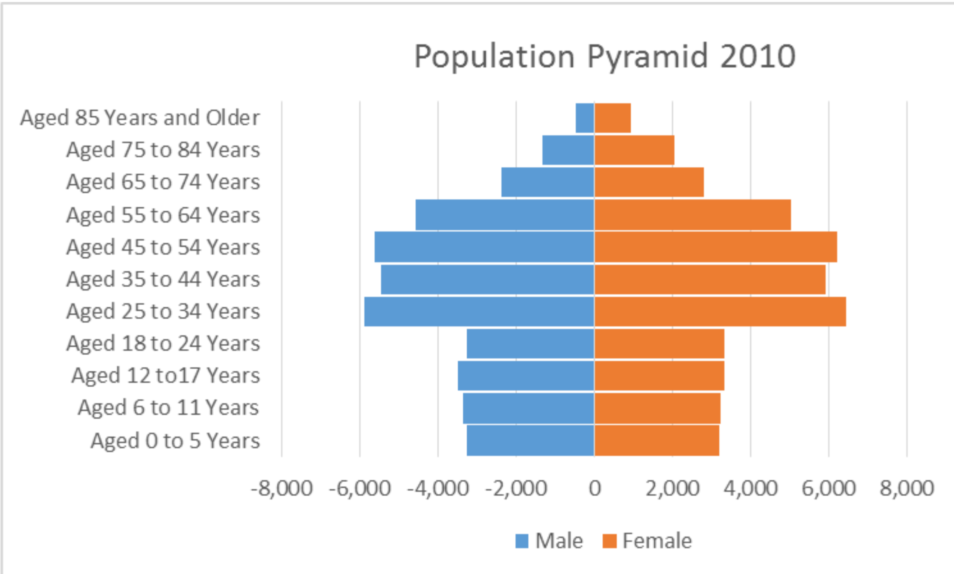
Alabama County Population 2000-2015 and Projections 2020-2040

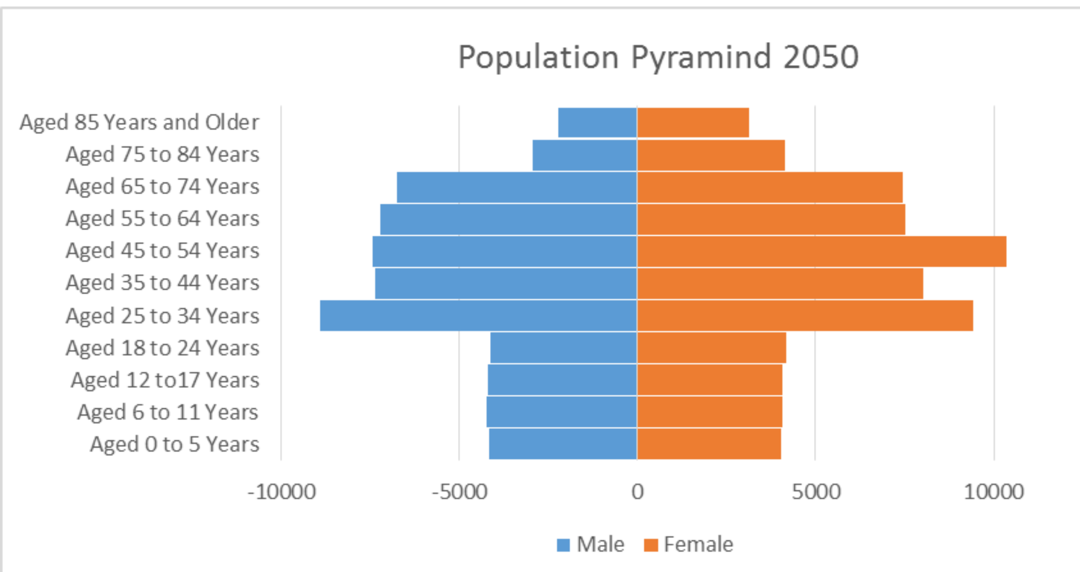
Source	Year	County	
		Jefferson	Shelby
Census	2000	662,047	143,293
Census	2010	658,466	195,085
Estimate	2015	660,367	208,085
Forecast	2020	662,458	224,628
Forecast	2025	663,999	239,859
Forecast	2030	665,244	253,485
Forecast	2035	666,342	265,330
Forecast	2040	667,433	276,373
Projected Change 2010-2040	Number	8,967	81,288
	Percent	1.4	41.7

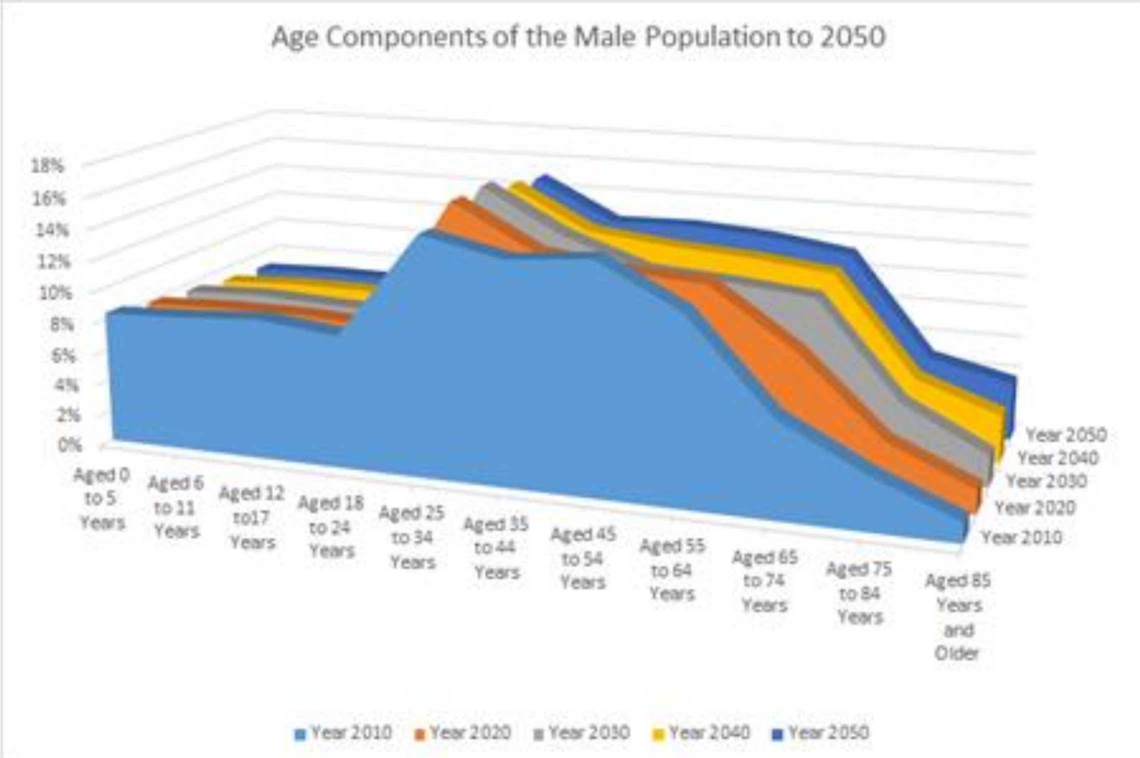
Source: U.S. Census Bureau and Center for Business and Economic Research, The University of Alabama, March 2017.

Components of the Hoover Population 2010 and 2050

The following graphs show the age and gender components of change expected in the Hoover population over the next three decades compared to that of the 2010 Census.



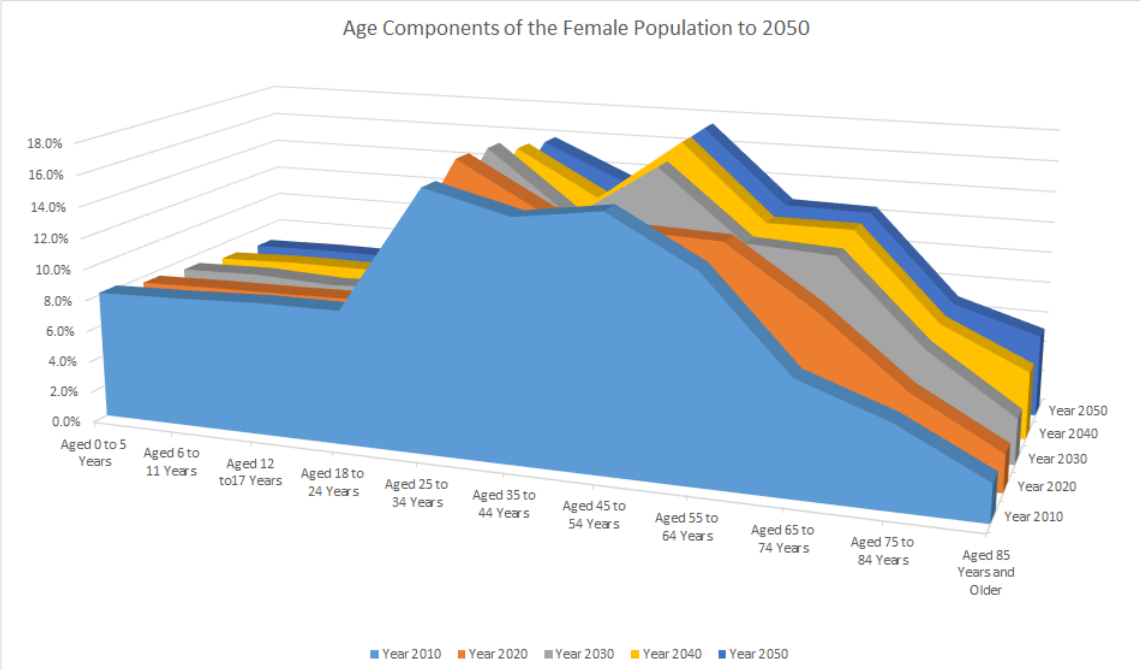




Number of Males by Year and Age Cohort

	Year 2010	Year 2020	Year 2030	Year 2040	Year 2050
Aged 0 to 5 Years	3,275	3,544	3,855	3,983	4,149
Aged 6 to 11 Years	3,362	3,625	3,955	4,123	4,245
Aged 12 to17 Years	3,485	3,634	3,838	4,111	4,211
Aged 18 to 24 Years	3,271	3,528	3,768	3,950	4,118
Aged 25 to 34 Years	5,876	7,268	8,245	8,535	8,894
Aged 35 to 44 Years	5,447	6,026	6,836	7,077	7,374
Aged 45 to 54 Years	5,633	5,696	5,927	6,753	7,429
Aged 55 to 64 Years	4,588	5,522	5,746	6,547	7,202
Aged 65 to 74 Years	2,386	3,929	5,484	6,216	6,745
Aged 75 to 84 Years	1,316	1,713	2,390	2,710	2,940
Aged 85 Years and Older	474	669	1,015	1,678	2,218

Source of methodology: U.S. Census Bureau, Population Division
Release Date: March 2018



Number of Females by Year and Age Cohort

	Year 2010	Year 2020	Year 2030	Year 2040	Year 2050
Aged 0 to 5 Years	3,190	3,436	3,743	3,874	4,032
Aged 6 to 11 Years	3,245	3,483	3,800	3,963	4,084
Aged 12 to17 Years	3,326	3,506	3,676	3,953	4,061
Aged 18 to 24 Years	3,328	3,559	3,800	3,987	4,165
Aged 25 to 34 Years	6,451	7,811	8,733	9,028	9,410
Aged 35 to 44 Years	5,918	6,484	6,664	7,408	8,016
Aged 45 to 54 Years	6,216	6,175	8,481	9,645	10,360
Aged 55 to 64 Years	5,052	6,081	6,250	6,947	7,518
Aged 65 to 74 Years	2,808	4,438	6,095	6,932	7,446
Aged 75 to 84 Years	2,041	2,460	3,378	3,842	4,127
Aged 85 Years and Older	931	1,072	1,485	2,405	3,130

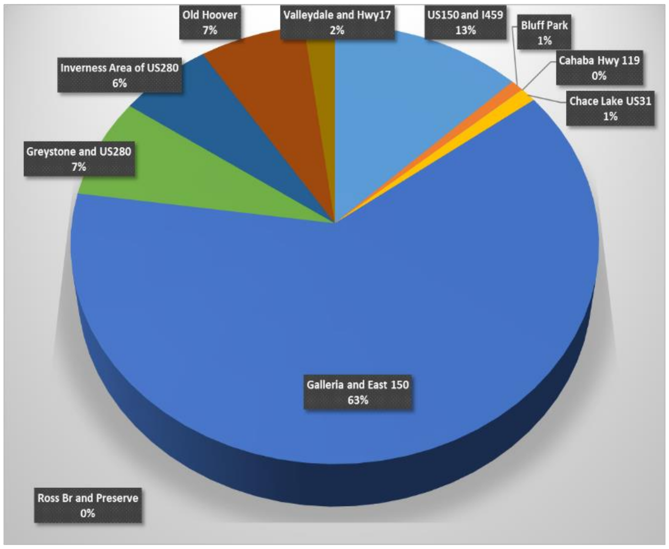
Source of methodology: U.S. Census Bureau, Population Division
Release Date: March 2018

Shopping Center Analysis by Subarea

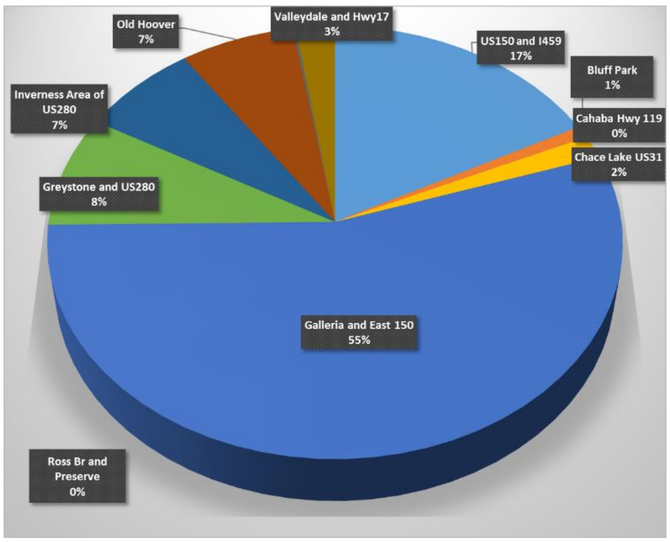
Analysis of Hoover's Shopping Centers

Shopping center-generated sales tax revenue has historically played a very large role in Hoover's ability to fund public use projects and public service jobs. While the future of retailing in general is somewhat in doubt, the Hoover retail sector still appears extremely strong, with growth along US 150 and US 280 compensating for slower growth of Hoover's traditional shopping areas. As shown below, the percentage of total retail sales tax generated for Hoover's by its shopping centers has shifted to some extent as the Riverchase Galleria and other shopping centers in the immediate vicinity have become moderately less critical as other areas (notably those at the western end of US 150) have grown.

2007 Distribution of shopping center revenue by geographic area



2017 Distribution of shopping center revenue by geographic area

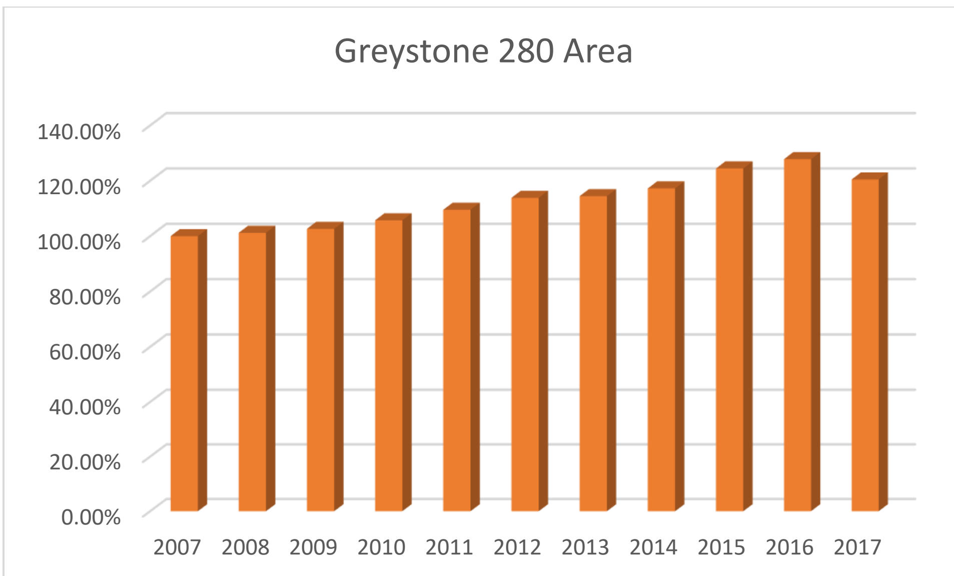


Source: Hoover Tax Revenue data

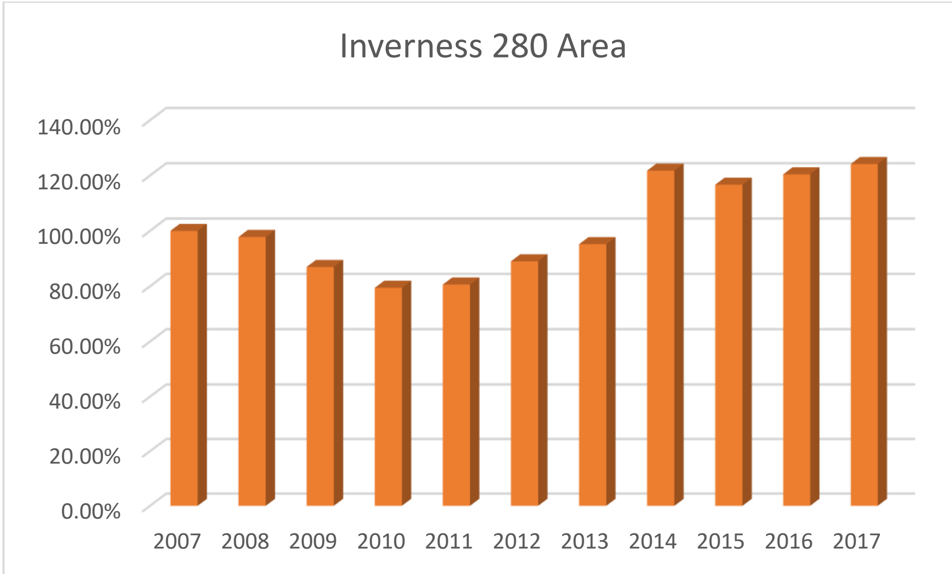
Revenue Generated by Shopping Centers in Hoover Subareas: Percentage Change from 2007 Revenue (or First Year of Operation)

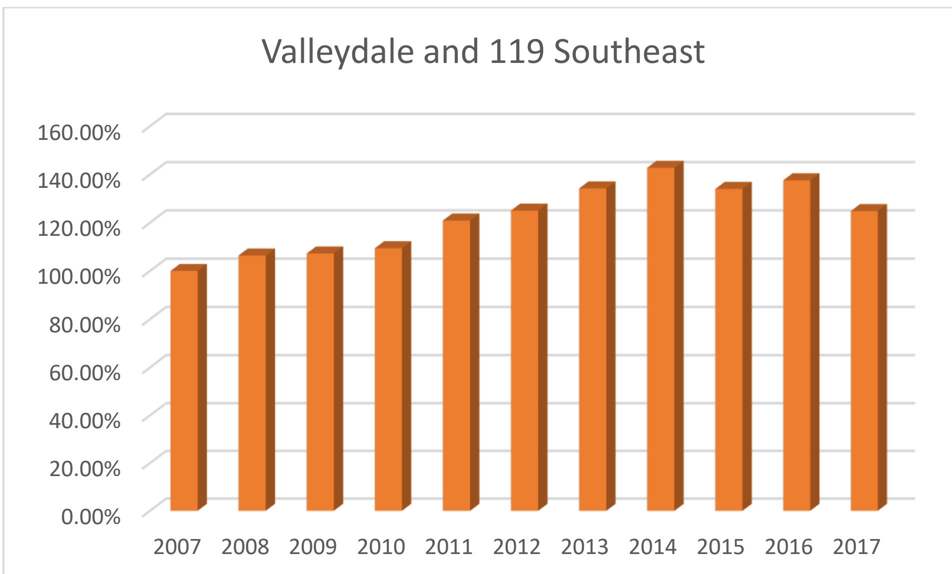
As shown in the graphs below, only the shopping centers in the Galleria and immediate vicinity and the US31 and Lorna Road east of the Galleria have revenue figures lower than those of 2007. While the Galleria and immediate vicinity revenue is recovering and has reached approximately 95 percent of the 2007 (prerecession) figure, the US31 and Lorna Road East of the Galleria revenue is only approximately 80 percent of that in 2007. However, the opening of the Whole Foods Market at the corner of Lorna and US31 has significant potential to change the fortunes of that area.

Shopping Centers East of I-65

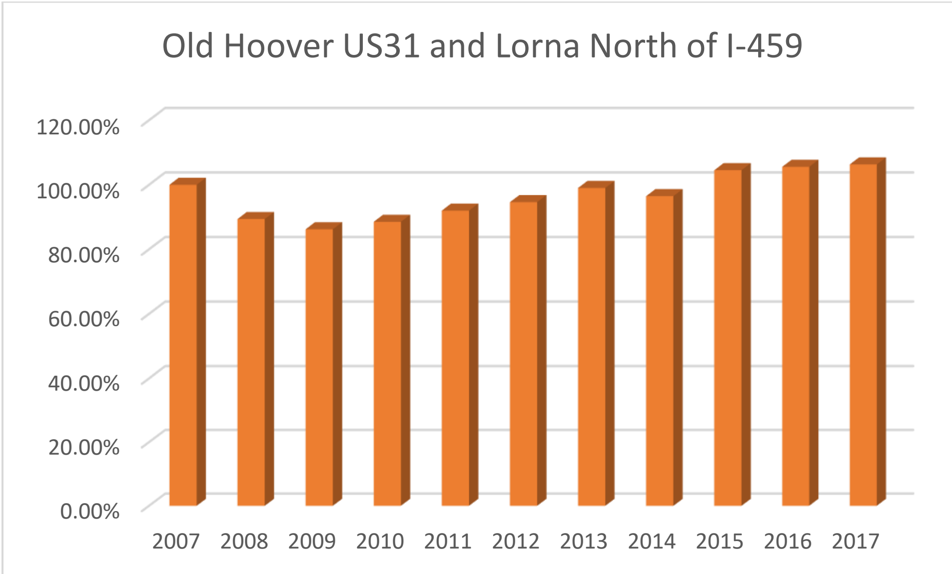


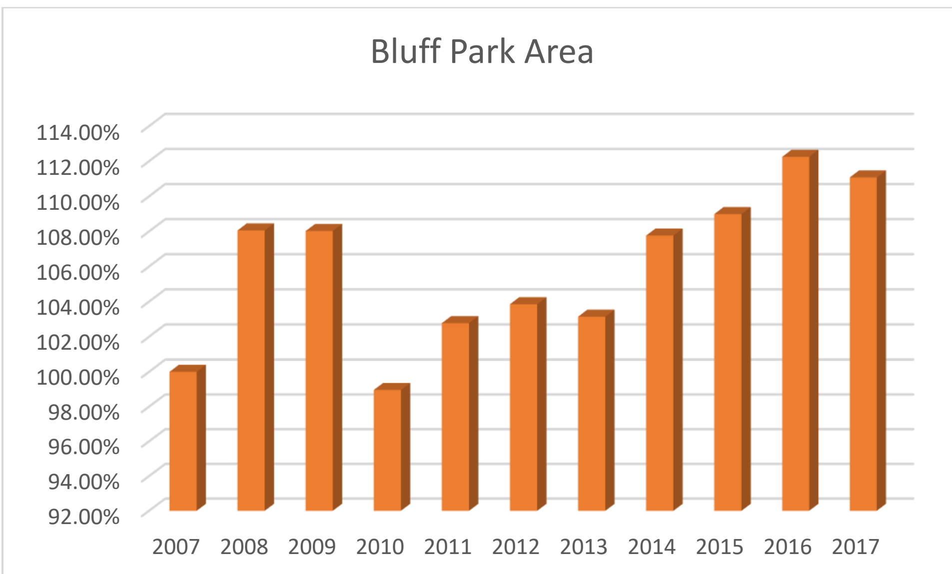
Shopping Centers East of I-65 (continued)



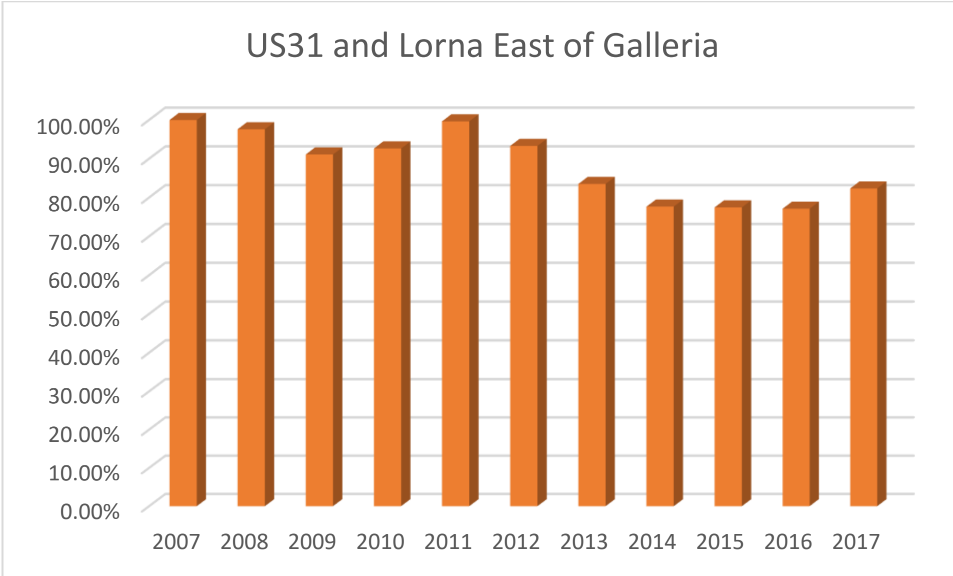


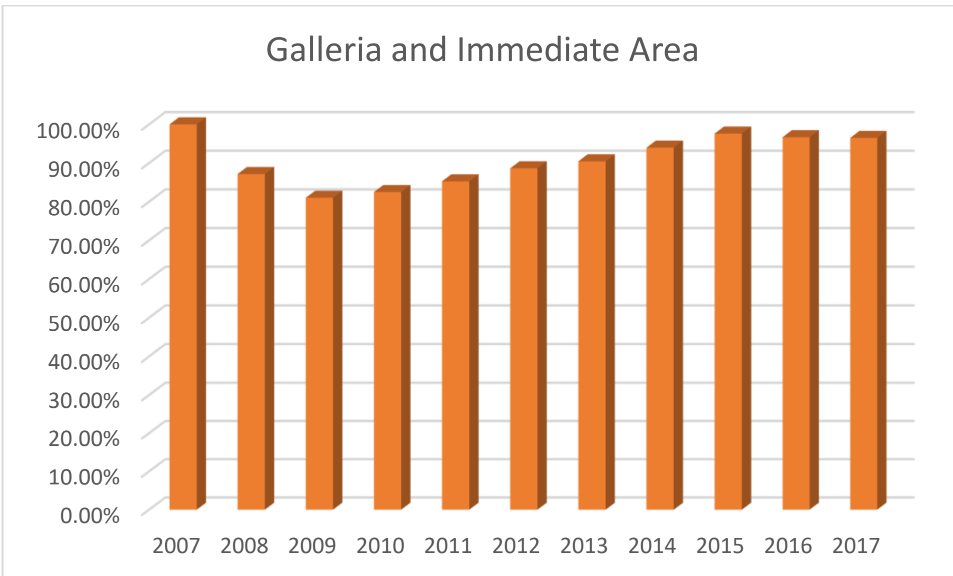
Shopping Centers North of I-459



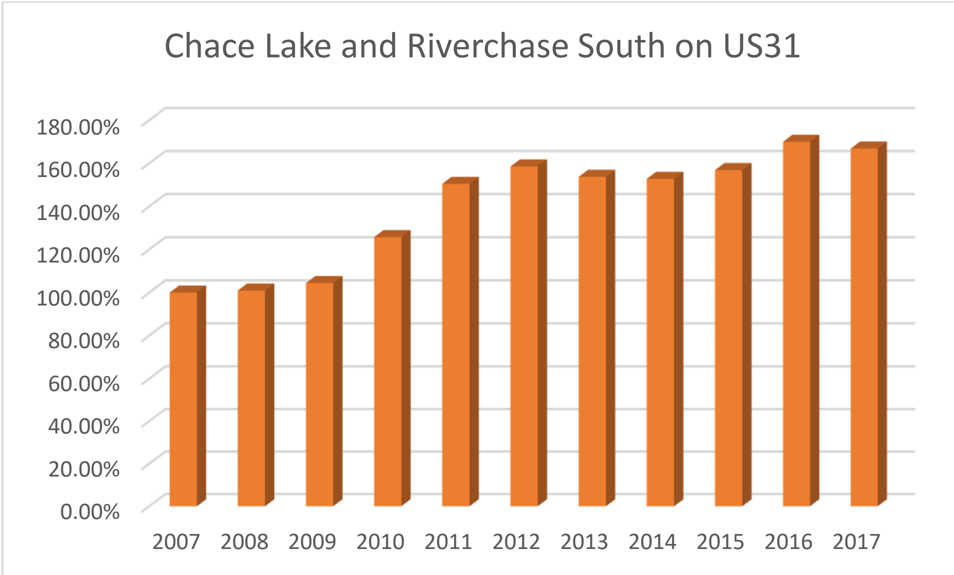


Shopping Centers near the Riverchase Galleria and South along US31

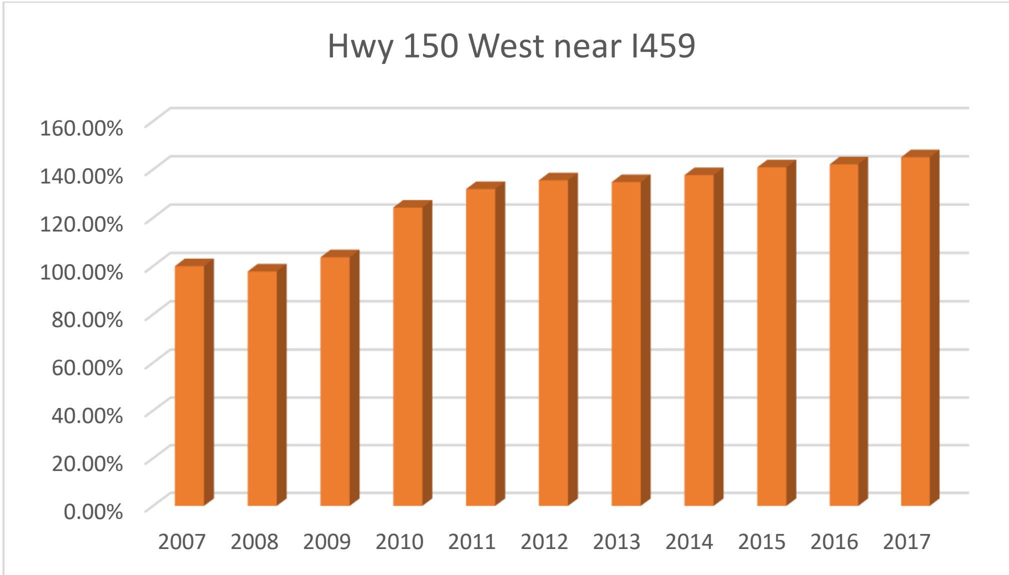


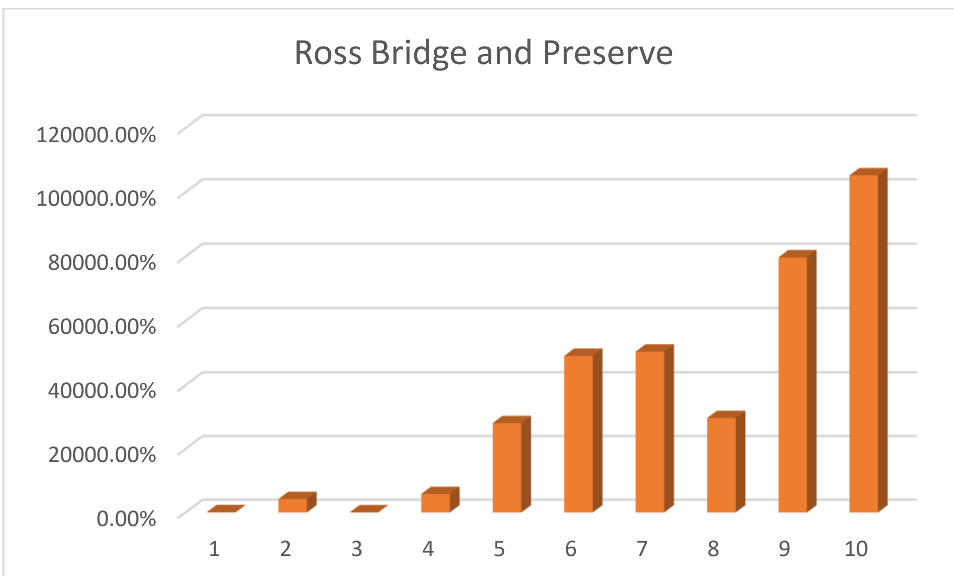


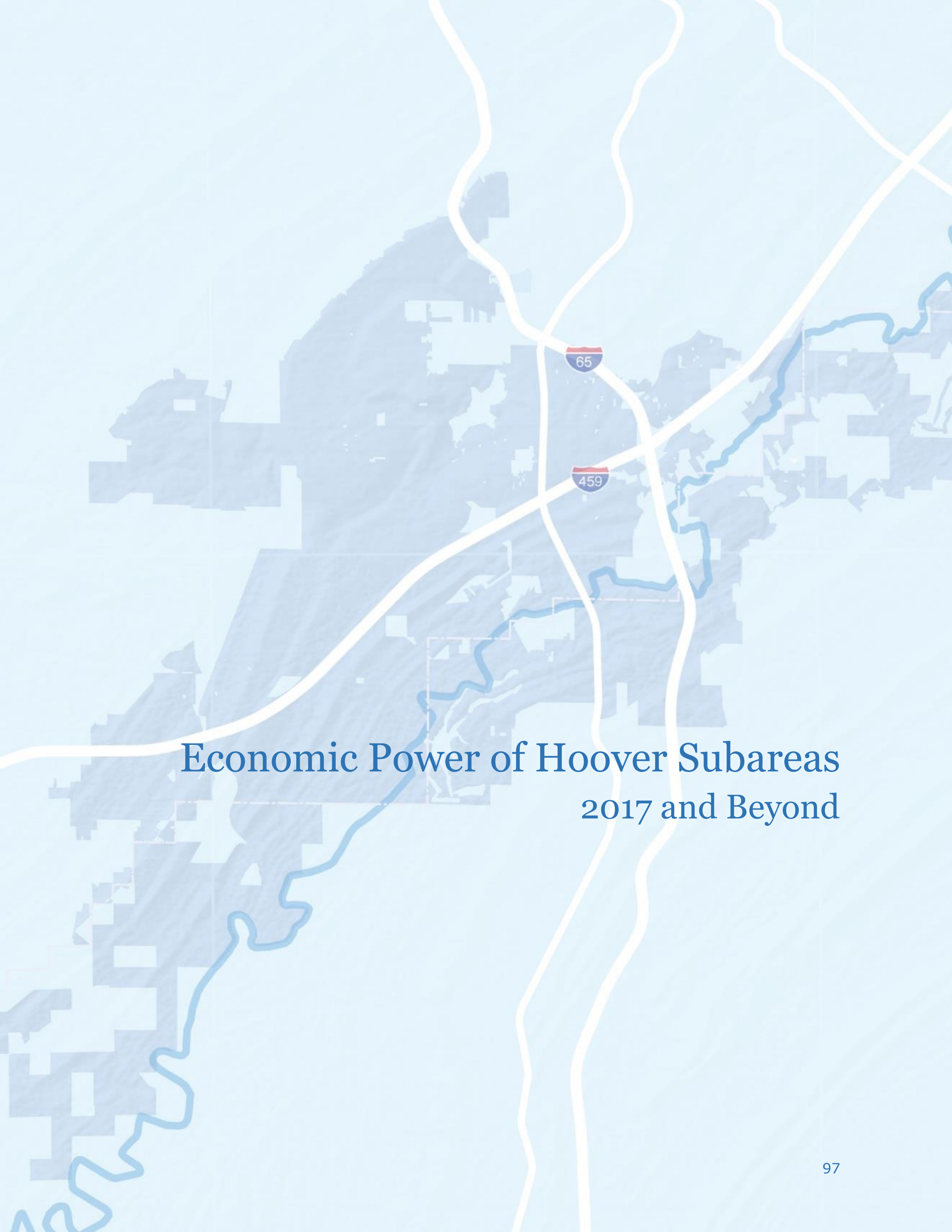
Shopping Centers near the Riverchase Galleria and South along US31 (continued)



Shopping Centers in West and Northwest Hoover







Economic Power of Hoover Subareas

2017 and Beyond

Hoover's history is that of individual neighborhoods coming together over time to become a city which is, by all definitions, an economic powerhouse. If the vision of Hoover officials is to recreate a "villages" feel to Hoover's subareas, a strategy supported by many residents, it is necessary to estimate the economic power and economic needs of each subarea as a basis for a network of support services and businesses which would be appropriate for each.

The following information was gleaned from a variety of sources and provides historical data, estimates, and company-supplied data about individual store sales of selected brands of retailer and restaurants and brands.

Per Store Retail Sales of Selected Retail Categories in Alabama

	Average Retail Sales of Stores in Alabama 2017
Supermarkets and grocery stores	$ 8,773,721.34
Beer, wine, and liquor stores	$ 1,315,099.00
Furniture and home furnishings stores	$ 1,131,029.02
Electronics and appliance stores	$ 1,692,525.56
Men's clothing stores	$ 903,666.09
Women's clothing stores	$ 764,784.57
Shoe stores	$ 1,344,422.19
Pharmacies and drug stores	$ 5,032,507.28
Sporting goods, hobby, musical instrument, and book stores	$ 2,482,137.89

Source: 2007, 2012 Economic Census (Adjusted to 2017 estimate)

Per Store Retail Sales of Supermarkets in the US 2016

Supermarkets only	$17, 390,000

Source: Progressive Grocer, Neilsen 2018

Per Unit Revenue of Selected Retail and Restaurant Brands, 2017

Whole Foods Markets	$ 34.7 million
Publix Super Markets	$ 24.8 million
Walmart Neighborhood Market	$ 20.4 million
Aldi	$ 11.3 million
Walgreen's	$ 7.6 million
CVS	$ 8.2 million
Outback	$ 3.2 million
Carrabba's	$ 2.9 million
Longhorn Steakhouse	$ 4.5 million
Olive Garden	$ 4.8 million
Chili's	$ 2.5 million

Source: Stores.org, June 2017, eMarketer, 2018

Consumer Expenditure Estimates of Hoover's Subareas

Household spending by category of retail good is estimated annually at the national and regional level based on the Consumer Expenditure Survey, a methodology designed by the U.S. Bureau of Labor Statistics. It takes into account age, income, and education of the head of household along with several other demographic characteristics, including number of children and region of the country. Easy Analytic Software, Inc. (EASI) is the source of all estimates at the Census Block Group level using BLS figures.

Where Analysis Areas across Census Block Group boundaries, the characteristics of the Analysis Area are estimated based on the percentage of the Block Group that the Analysis Area comprises. The boundaries do not necessarily correspond with the exact boundaries of the Hoover neighborhoods but are similar and consistent.

Greystone and US 280: Greystone, Lee Branch, Inverness

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 19,251,919	$ 2,202,449
Food away from home	$ 16,608,608	$ 1,839,190
Alcoholic beverages	$ 3,194,699	$ 340,322
Household furnishings and equipment	$ 10,726,553	$ 1,152,688
Floor coverings	$ 97,521	$ 10,579
Furniture	$ 3,169,844	$ 338,509
Major appliances	$ 1,319,143	$ 146,477
Miscellaneous household equipment	$ 4,905,888	$ 519,772
Television, radios, sound equipment	$ 5,028,155	$ 579,016
Women's and girls	$ 4,140,295	$ 448,455
Men and boys	$ 2,396,179	$ 265,708
Footwear	$ 2,027,737	$ 223,195
Medical supplies	$ 701,362	$ 78,099
Drugs	$ 1,843,029	$ 209,126
Personal care products, services	$ 3,669,259	$ 408,885
Fees and admissions	$ 5,096,950	$ 515,507
Other entertainment supplies	$ 2,868,365	$ 299,295
Pets, toys, and playground equipment	$ 3,350,676	$ 368,134
Total	$ 90,396,183	$ 9,945,405

Assuming that the $90.4 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the $9.9 million in future expenditures in this geographic area could easily be absorbed by businesses already in the area, especially since the retail, service, and restaurant inventory is so dense in the Birmingham, Hoover, and Shelby County areas along US 280.

Northeast: Altadena Woods, Caldwell Mill

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 5,707,987	$ 45,009
Food away from home	$ 4,933,936	$ 38,906
Alcoholic beverages	$ 961,553	$ 7,582
Household furnishings and equipment	$ 3,201,277	$ 25,243
Floor coverings	$ 29,565	$ 233
Furniture	$ 932,494	$ 7,353
Major appliances	$ 401,965	$ 3,170
Miscellaneous household equipment	$ 1,466,522	$ 11,564
Television, radios, sound equipment	$ 1,475,274	$ 11,633
Women's and girls	$ 1,224,666	$ 9,657
Men and boys	$ 704,229	$ 5,553
Footwear	$ 595,706	$ 4,697
Medical supplies	$ 213,963	$ 1,687
Drugs	$ 565,675	$ 4,461
Personal care products, services	$ 1,085,142	$ 8,557
Fees and admissions	$ 1,527,587	$ 12,045
Other entertainment supplies	$ 889,943	$ 7,017
Pets, toys, and playground equipment	$ 1,032,527	$ 8,142
Total	$ 26,950,012	$ 212,509

Assuming that the $27 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the $212 thousand in future expenditures in this geographic area from new housing growth could easily be absorbed by businesses already in the area. Any other growth would be from in-fill housing on an ad-hoc basis, fewer vacant homes and apartments, or higher birth rates or persons per household.

North Central: Loch Haven, Rocky Ridge Road, Wisteria

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 11,796,567	$ -
Food away from home	$ 8,797,088	$ -
Alcoholic beverages	$ 1,441,890	$ -
Household furnishings and equipment	$ 5,243,657	$ -
Floor coverings	$ 50,689	$ -
Furniture	$ 1,502,927	$ -
Major appliances	$ 759,183	$ -
Miscellaneous household equipment	$ 2,248,703	$ -
Television, radios, sound equipment	$ 3,175,092	$ -
Women's and girls	$ 2,060,602	$ -
Men and boys	$ 1,305,139	$ -
Footwear	$ 1,095,029	$ -
Medical supplies	$ 404,233	$ -
Drugs	$ 1,141,157	$ -
Personal care products, services	$ 2,044,965	$ -
Fees and admissions	$ 1,863,950	$ -
Other entertainment supplies	$ 1,242,646	$ -
Pets, toys, and playground equipment	$ 1,788,337	$ -
Total	$ 47,961,855	

Assuming that the $48 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the only economic growth in this geographic area would be from in-fill housing on an ad-hoc basis, fewer vacant homes and apartments, or higher birth rates or persons per household.

Riverchase, Acton

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 13,217,103	$ -
Food away from home	$ 10,952,021	$ -
Alcoholic beverages	$ 1,974,196	$ -
Household furnishings and equipment	$ 6,792,043	$ -
Floor coverings	$ 62,901	$ -
Furniture	$ 1,977,344	$ -
Major appliances	$ 887,547	$ -
Miscellaneous household equipment	$ 3,037,131	$ -
Television, radios, sound equipment	$ 3,453,758	$ -
Women's and girls	$ 2,646,766	$ -
Men and boys	$ 1,585,738	$ -
Footwear	$ 1,329,142	$ -
Medical supplies	$ 470,918	$ -
Drugs	$ 1,265,725	$ -
Personal care products, services	$ 2,440,137	$ -
Fees and admissions	$ 3,003,083	$ -
Other entertainment supplies	$ 1,781,643	$ -
Pets, toys, and playground equipment	$ 2,187,434	$ -
Total	$ 59,064,631	

Assuming that the $59 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the only growth in this geographic area would be from in-fill housing on an ad-hoc basis, fewer vacant homes and apartments, or higher birth rates or persons per household.

Central: Woodmeadows, Old Rocky Ridge Road

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 11,240,191	$ 471,146
Food away from home	$ 8,086,658	$ 338,962
Alcoholic beverages	$ 1,175,991	$ 49,293
Household furnishings and equipment	$ 4,668,568	$ 195,688
Floor coverings	$ 41,852	$ 1,754
Furniture	$ 1,443,256	$ 60,496
Major appliances	$ 633,076	$ 26,536
Miscellaneous household equipment	$ 1,936,410	$ 81,167
Television, radios, sound equipment	$ 3,182,321	$ 133,391
Women's and girls	$ 1,919,129	$ 80,443
Men and boys	$ 1,300,892	$ 54,528
Footwear	$ 1,095,717	$ 45,928
Medical supplies	$ 324,995	$ 13,623
Drugs	$ 894,926	$ 37,512
Personal care products, services	$ 1,970,325	$ 82,588
Fees and admissions	$ 1,471,360	$ 61,674
Other entertainment supplies	$ 866,404	$ 36,316
Pets, toys, and playground equipment	$ 1,333,161	$ 55,881
Total	$ 43,585,231	$ 1,826,926

Assuming that the $43.6 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the $1.8 million in future expenditures in this geographic area from new residents could easily be absorbed by businesses already in the area. Any additional would be from in-fill housing on an ad-hoc basis, fewer vacant homes and apartments, or higher birth rates or persons per household.

Southeast: Quail Run, Southlake, Windover

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 4,711,285	$ 49,478
Food away from home	$ 3,999,104	$ 42,409
Alcoholic beverages	$ 759,947	$ 8,084
Household furnishings and equipment	$ 2,580,876	$ 27,453
Floor coverings	$ 24,330	$ 250
Furniture	$ 740,596	$ 8,038
Major appliances	$ 338,287	$ 3,501
Miscellaneous household equipment	$ 1,172,087	$ 12,474
Television, radios, sound equipment	$ 1,211,957	$ 12,697
Women's and girls	$ 982,570	$ 10,545
Men and boys	$ 571,195	$ 6,156
Footwear	$ 482,082	$ 5,228
Medical supplies	$ 179,530	$ 1,814
Drugs	$ 481,096	$ 4,718
Personal care products, services	$ 883,790	$ 9,360
Fees and admissions	$ 1,192,122	$ 13,073
Other entertainment supplies	$ 721,606	$ 7,446
Pets, toys, and playground equipment	$ 853,846	$ 8,761
Total	$ 21,886,305	$ 231,484

Assuming that the $21.9 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the $231 thousand in future expenditures in this geographic area could easily be absorbed by businesses already in the area. Any additional growth would be from in-fill housing on an ad-hoc basis, fewer vacant homes and apartments, or higher birth rates or persons per household.

Old Hoover North: Bluff Park, Carisbrook, Country Club Highlands, Green Valley, Shades Cliff, Camelot Woods

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 30,395,304	$ 191,689
Food away from home	$ 24,446,727	$ 156,245
Alcoholic beverages	$ 4,403,903	$ 28,374
Household furnishings and equipment	$ 15,124,473	$ 96,500
Floor coverings	$ 146,278	$ 941
Furniture	$ 4,257,192	$ 26,814
Major appliances	$ 2,098,712	$ 13,552
Miscellaneous household equipment	$ 6,728,620	$ 43,050
Television, radios, sound equipment	$ 7,838,618	$ 48,582
Women's and girls	$ 5,788,179	$ 36,696
Men and boys	$ 3,499,393	$ 22,130
Footwear	$ 2,926,482	$ 18,444
Medical supplies	$ 1,122,059	$ 7,207
Drugs	$ 3,086,435	$ 19,701
Personal care products, services	$ 5,450,823	$ 34,394
Fees and admissions	$ 6,386,059	$ 41,678
Other entertainment supplies	$ 4,113,114	$ 27,035
Pets, toys, and playground equipment	$ 5,222,599	$ 33,984
Total	$ 133,034,970	$ 847,016

Assuming that the $133 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, the $847 thousand in future expenditures in this geographic area could easily be absorbed by businesses already in the area. However, while the Bluff Park, Carisbrook, Green Valley, and Shades Cliff areas theoretically can access the Grove, US 31 shopping areas, and Galleria / Patton Creek shopping areas, the road networks to do so are often crowded and uninviting. There is a very large existing marketplace for goods and services in the area that would certainly appreciate entrepreneurial efforts to serve them.

Northwest: Deer Valley, Lake Cyrus, Preserve, Grove, Ross Bridge

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 19,743,765	$ 2,130,623
Food away from home	$ 16,685,693	$ 1,801,305
Alcoholic beverages	$ 2,979,376	$ 324,665
Household furnishings and equipment	$ 10,456,071	$ 1,132,213
Floor coverings	$ 95,008	$ 10,358
Furniture	$ 3,056,989	$ 329,614
Major appliances	$ 1,375,257	$ 149,232
Miscellaneous household equipment	$ 4,654,378	$ 504,901
Television, radios, sound equipment	$ 5,116,846	$ 550,081
Women's and girls	$ 4,058,425	$ 438,229
Men and boys	$ 2,442,509	$ 262,998
Footwear	$ 2,056,224	$ 221,676
Medical supplies	$ 702,054	$ 76,440
Drugs	$ 1,840,971	$ 200,534
Personal care products, services	$ 3,712,470	$ 400,299
Fees and admissions	$ 4,655,424	$ 506,564
Other entertainment supplies	$ 2,733,642	$ 300,672
Pets, toys, and playground equipment	$ 3,309,891	$ 362,332
Total	$ 89,674,993	$ 9,702,736

Assuming that the $89.7 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, there is still an opportunity for existing retail in this area since the current retail environment is not as dense as, for example, that along US 280 near Greystone and Inverness While there is apparently not enough new demand to support a supermarket, there might be enough to support a household furnishings / furniture store ($1.131 million average sales volume in Alabama) or other businesses based on a more detailed opportunity analysis.

One-Fifty: Chace Lake, HWY 150 Corridor

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 9,057,569	$ 3,335,675
Food away from home	$ 6,960,116	$ 2,457,832
Alcoholic beverages	$ 1,047,430	$ 364,149
Household furnishings and equipment	$ 3,880,050	$ 1,395,841
Floor coverings	$ 35,174	$ 12,489
Furniture	$ 1,169,812	$ 416,551
Major appliances	$ 514,971	$ 193,399
Miscellaneous household equipment	$ 1,638,475	$ 588,723
Television, radios, sound equipment	$ 2,473,986	$ 918,634
Women's and girls	$ 1,581,833	$ 573,054
Men and boys	$ 1,048,502	$ 378,234
Footwear	$ 867,348	$ 314,968
Medical supplies	$ 272,263	$ 101,404
Drugs	$ 751,047	$ 281,764
Personal care products, services	$ 1,603,095	$ 578,917
Fees and admissions	$ 1,345,788	$ 458,483
Other entertainment supplies	$ 792,942	$ 278,444
Pets, toys, and playground equipment	$ 1,159,306	$ 424,684
Total	$ 36,199,708	$ 13,073,246

Assuming that the $36.2 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, there is still potentially an opportunity for additional retail in this area. Although the large apartment community originally planned above US150 has been halted, there are likely to be population increases over time due to the amount of land available for additional housing.

Southwest: South Shades Crest, Trace Crossings

Spending Category	Estimated Spending as of 2017	Additional Spending from New Growth Past 2017
Food at home	$ 17,056,896	$ 18,173,743
Food away from home	$ 14,813,442	$ 16,099,891
Alcoholic beverages	$ 2,798,542	$ 3,102,113
Household furnishings and equipment	$ 9,561,871	$ 10,470,944
Floor coverings	$ 86,460	$ 93,572
Furniture	$ 2,816,754	$ 3,096,394
Major appliances	$ 1,205,478	$ 1,283,403
Miscellaneous household equipment	$ 4,325,766	$ 4,792,835
Television, radios, sound equipment	$ 4,394,974	$ 4,654,388
Women's and girls	$ 3,709,225	$ 4,071,317
Men and boys	$ 2,174,935	$ 2,346,876
Footwear	$ 1,851,574	$ 1,991,511
Medical supplies	$ 611,869	$ 657,429
Drugs	$ 1,556,777	$ 1,665,452
Personal care products, services	$ 3,279,556	$ 3,526,358
Fees and admissions	$ 4,492,682	$ 5,136,866
Other entertainment supplies	$ 2,602,673	$ 2,885,167
Pets, toys, and playground equipment	$ 3,014,760	$ 3,248,961
Total	$ 80,354,235	$ 87,297,220

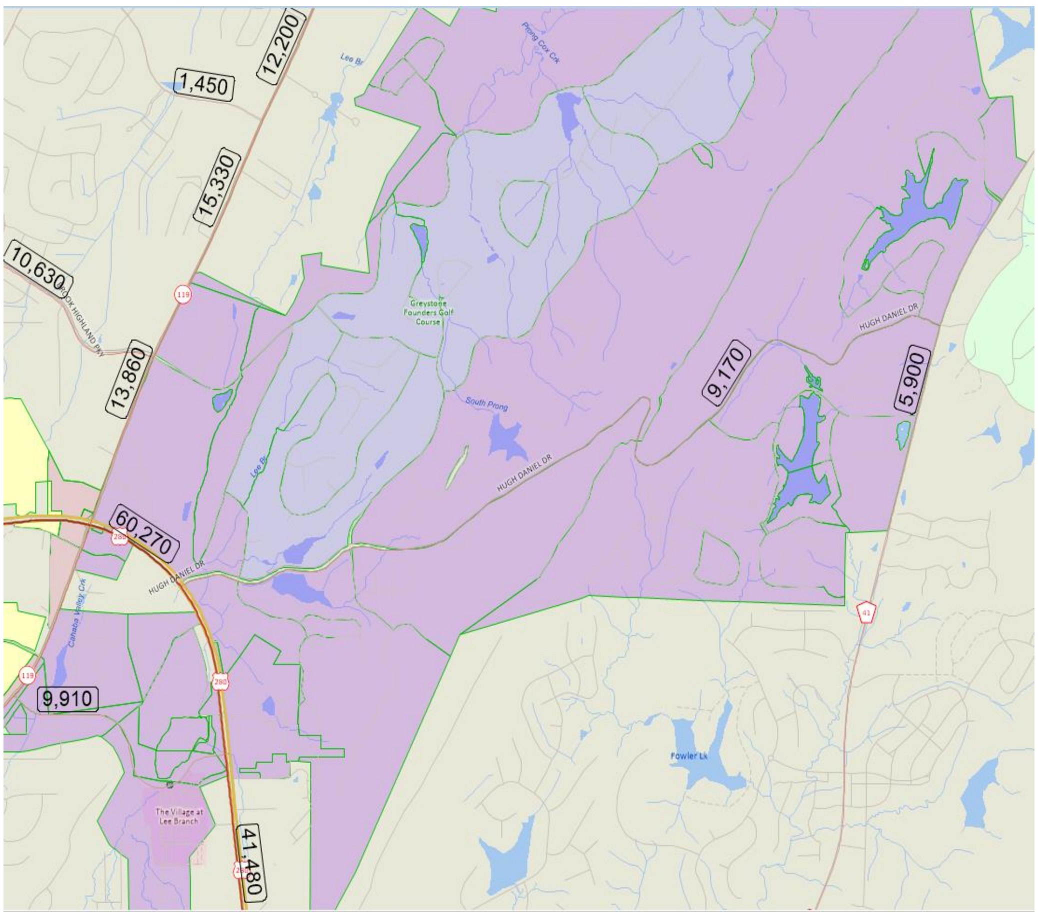
Even assuming that the $80.4 million in 2017 estimated expenditures is satisfied by existing retailers and eating establishments, there is still a huge opportunity for existing retail in this area. The future neighborhoods and expansions to existing neighborhoods in far Southwest Hoover will need a retail and services mix that will be more than double what exists today. Businesses of all types have more than enough future businesses to support them from the new growth expected in the area.

Traffic Flows and Major Road Connections

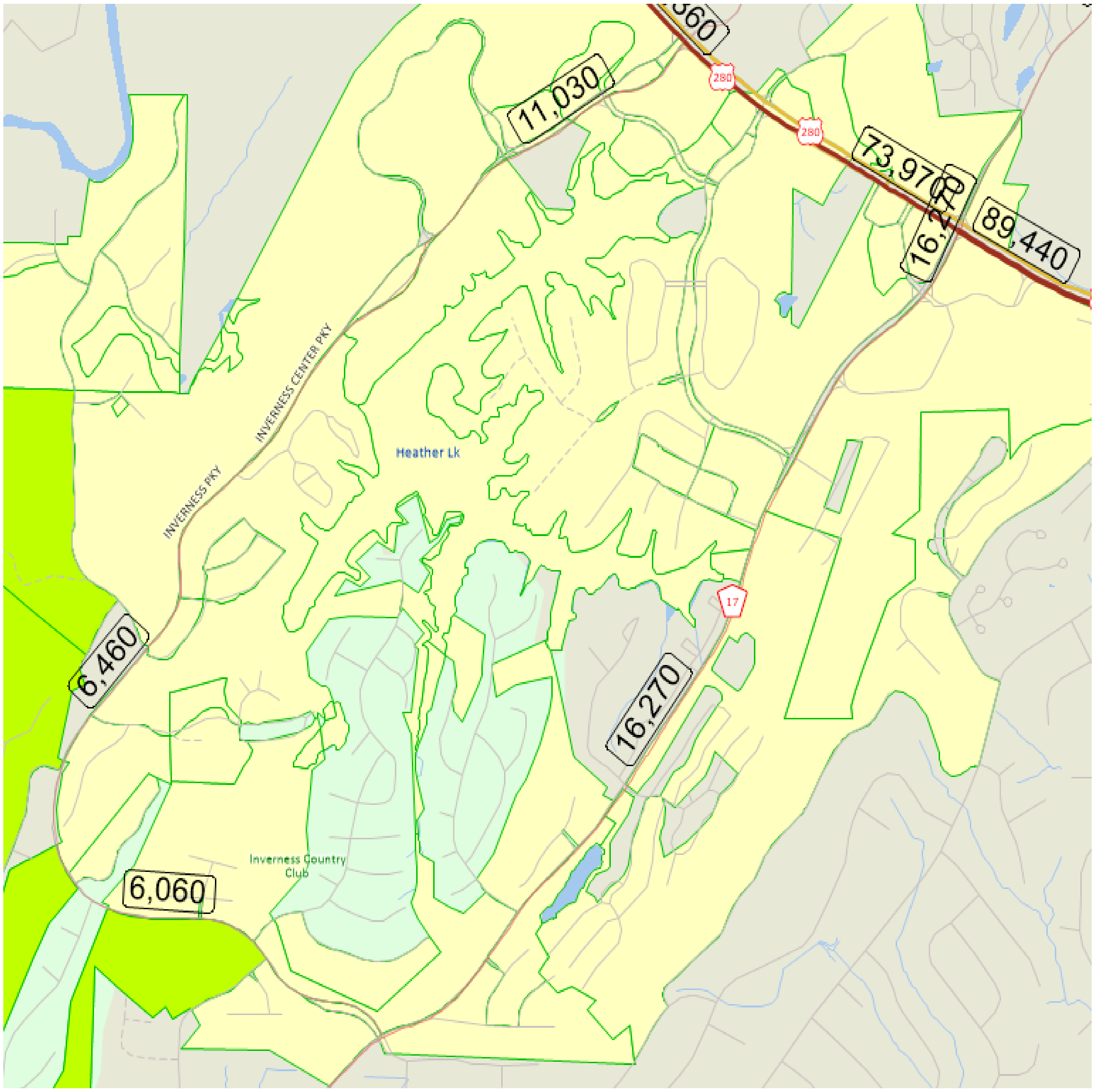
Hoover's subareas are served by road networks that have had to adapt to significant growth in vehicular traffic over the past several years. The strategic planning process currently underway in Hoover will need to address traffic issues. In addition, any plans to connect Hoover's neighborhoods with alternative travel routes (walking paths and bike paths, for example) will need to take into account the major traffic flow arteries already in place. Annual average daily traffic is the total volume of vehicle traffic on a highway or road for a year divided by 365 days. AADT is a useful measure of how busy a road is.

The following AADT (Average Annual Daily Traffic) figures for 2017 for the roads serving each of Hoover's Analysis subareas are shown in maps below.

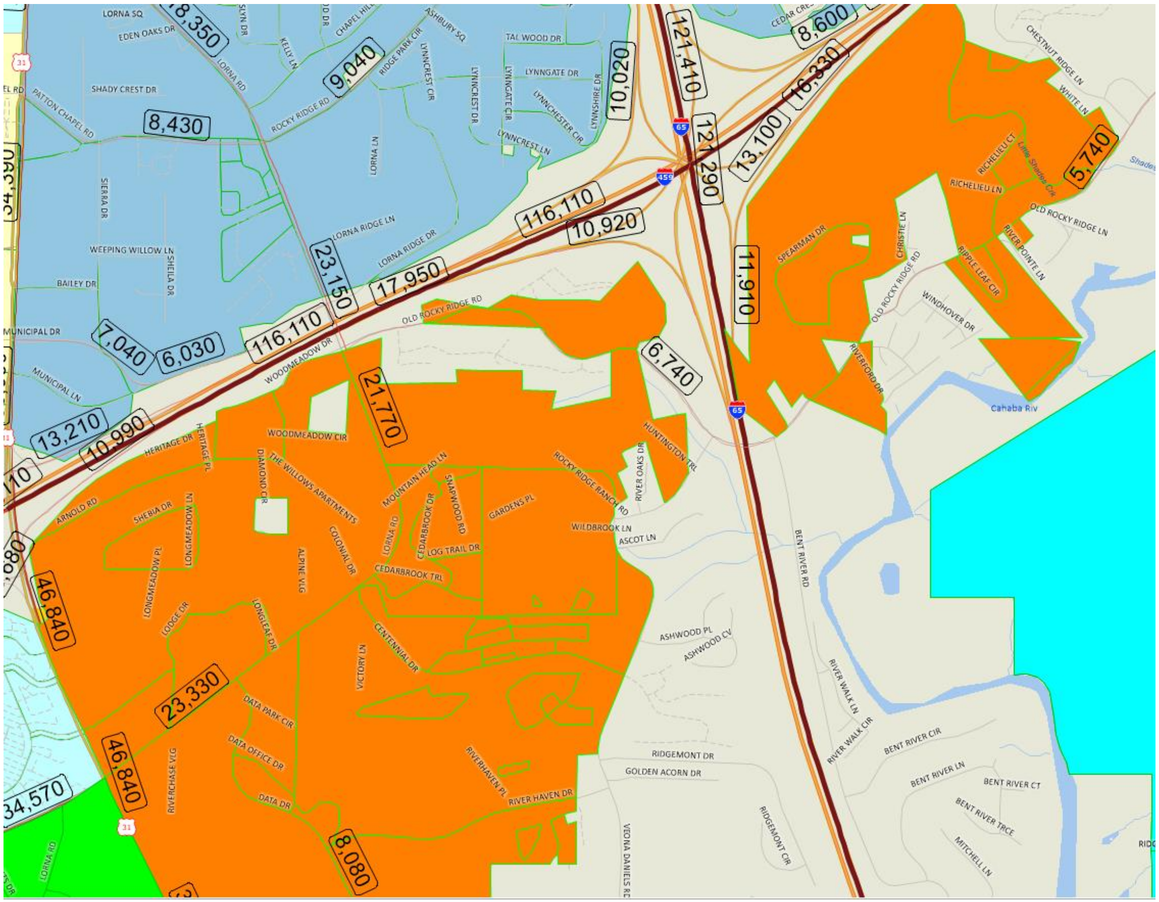
Greystone Subarea



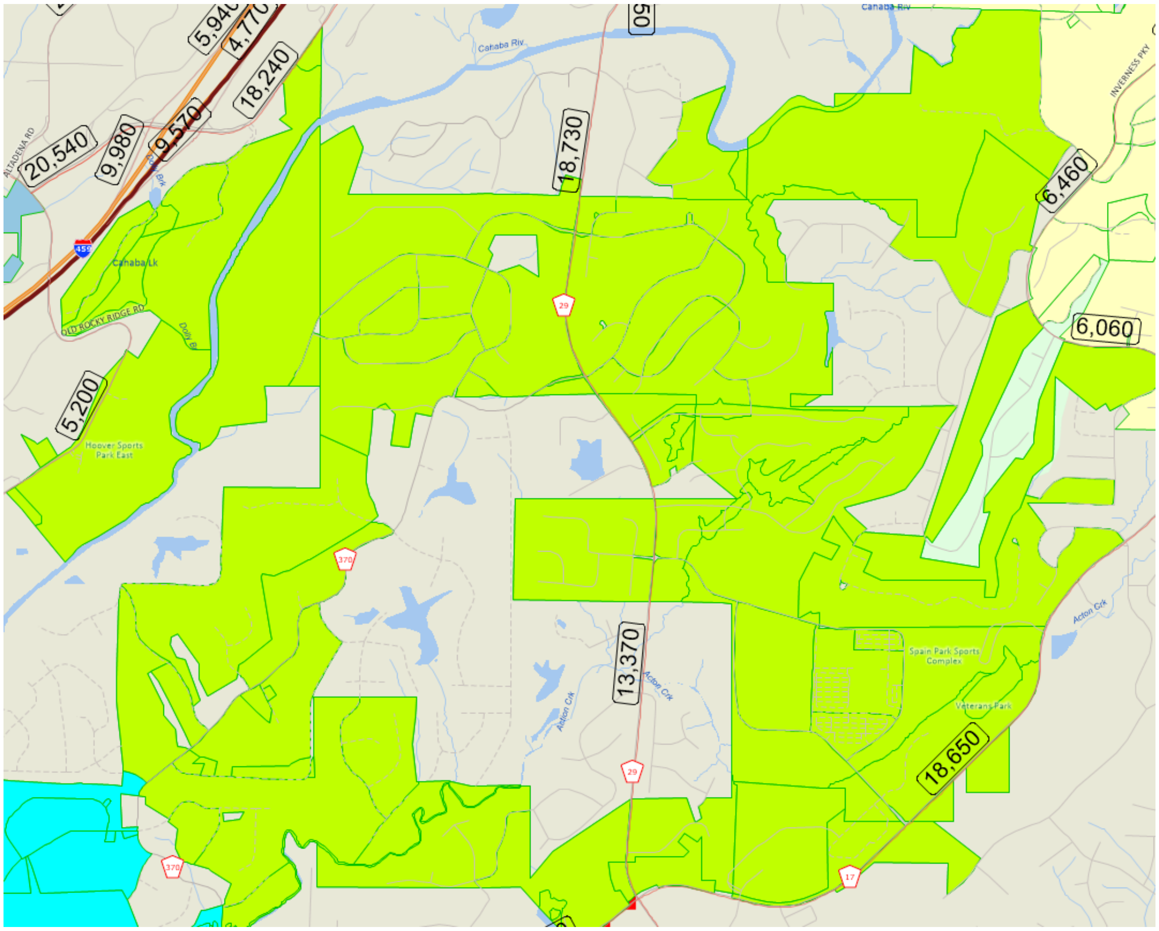
Inverness Subarea



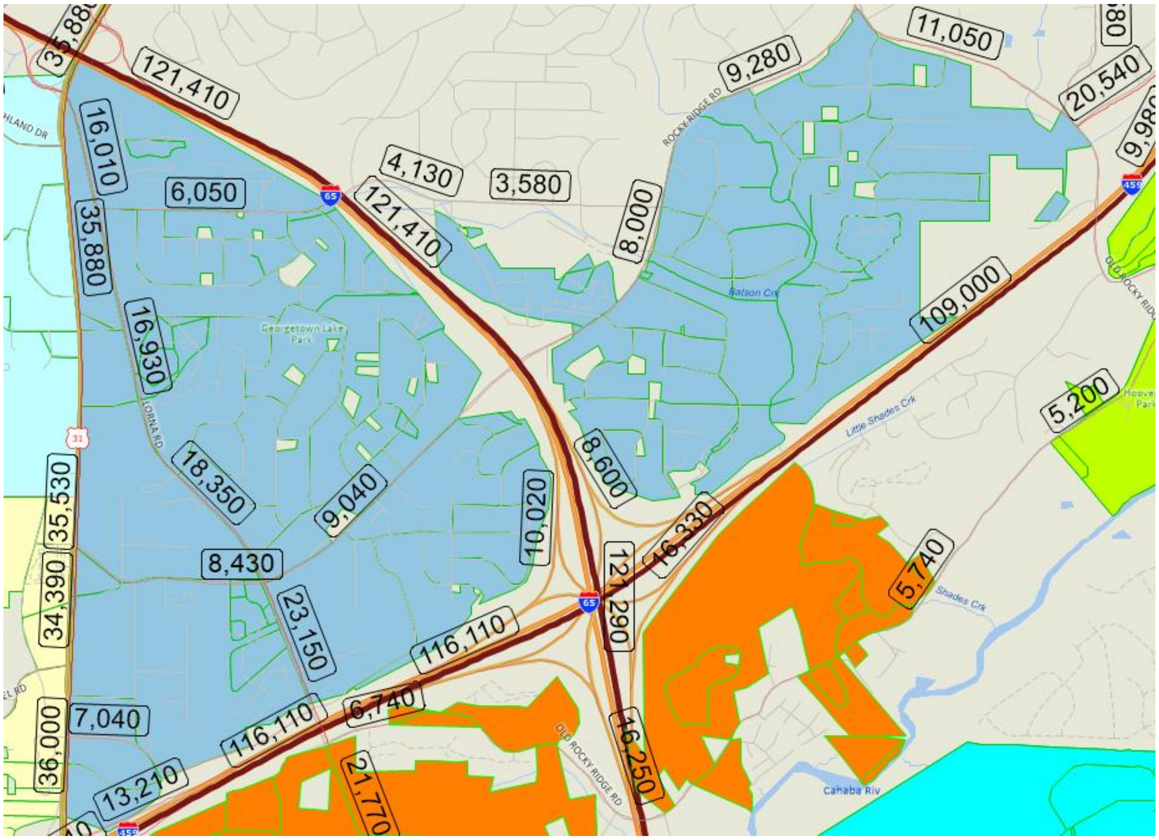
Woodmeadows and Old Rocky Ridge Road Subarea



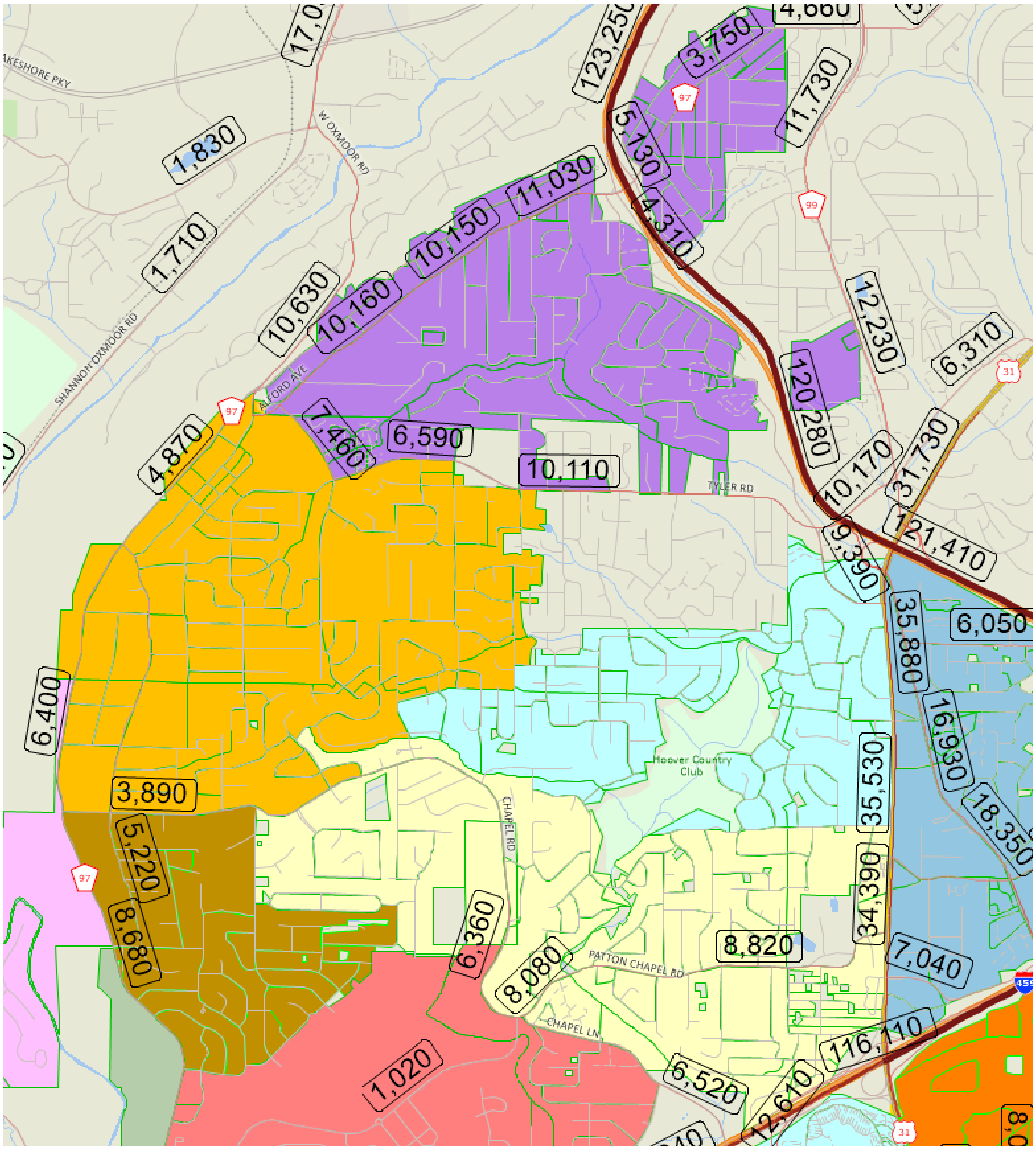
Altadena Woods and Caldwell Mill Subarea



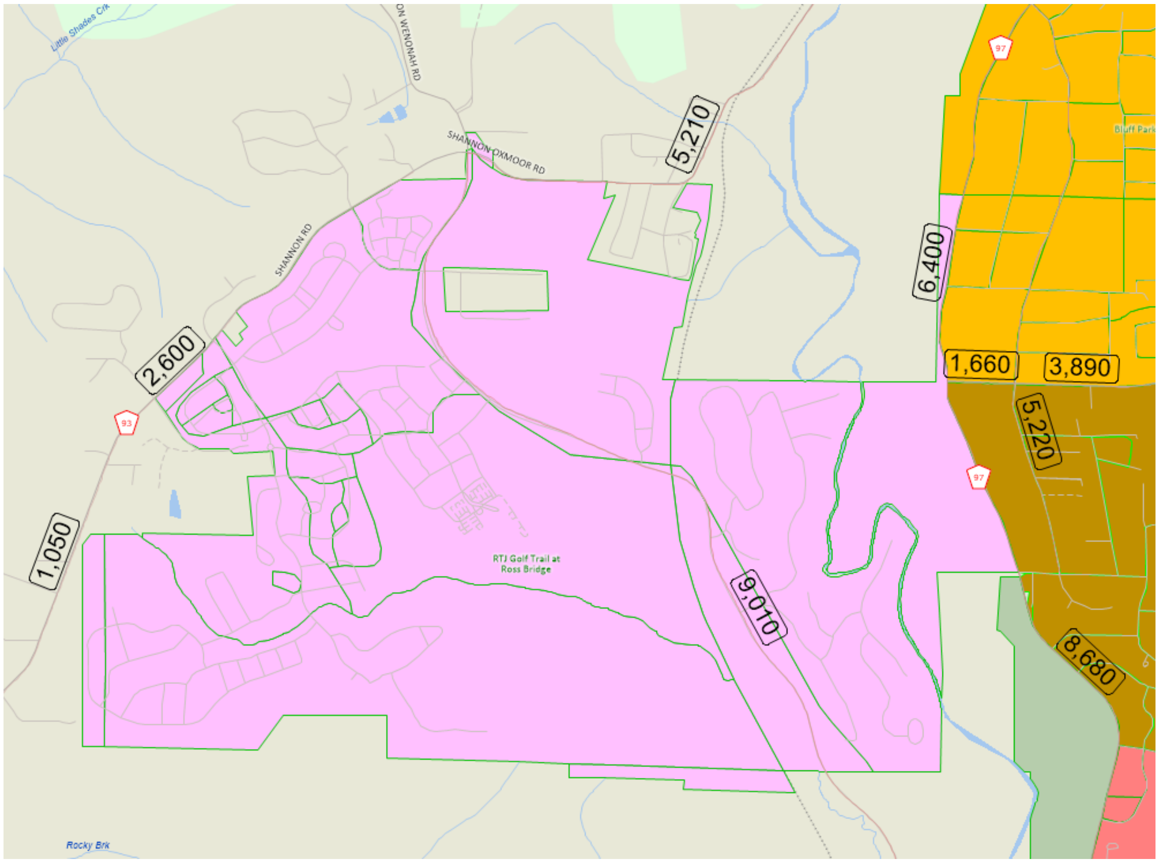
Loch Haven, Rocky Ridge Road, Wisteria Subarea



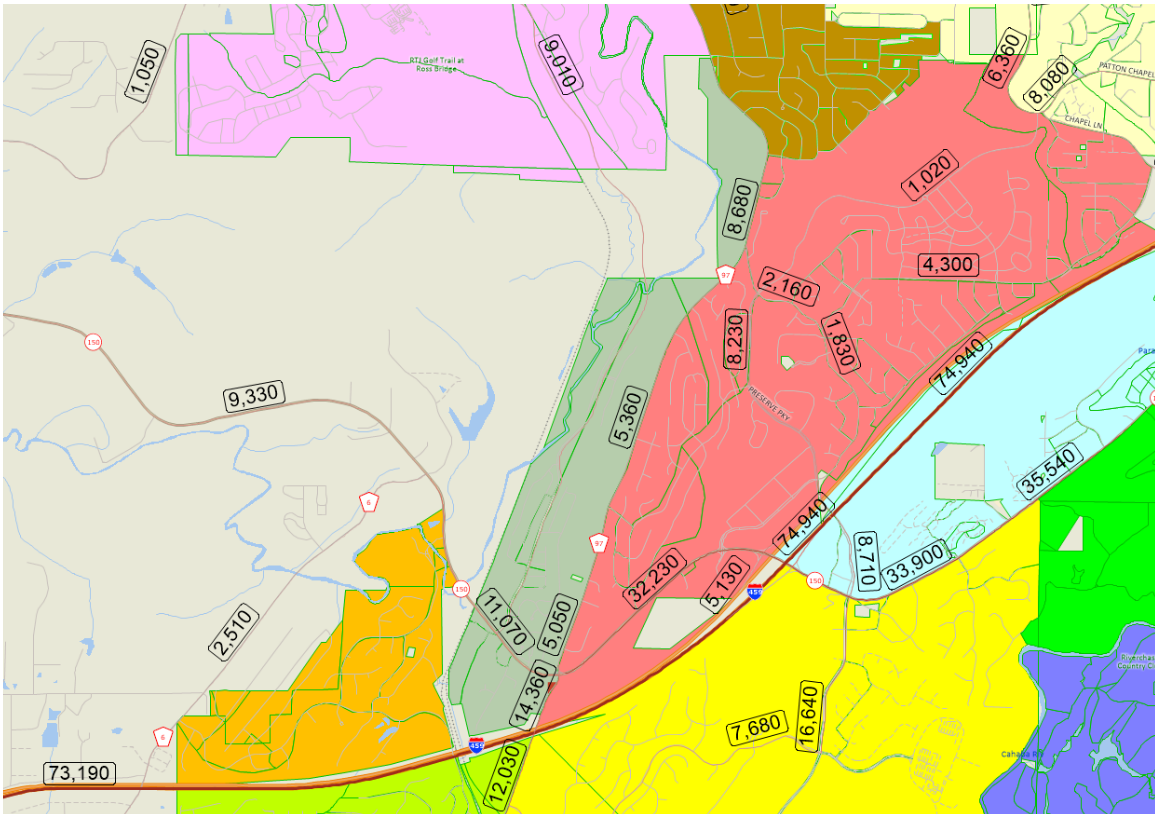
Bluff Park, Carisbrook, Country Club Highlands, Green Valley, Shades Cliff, Camelot Woods Subarea



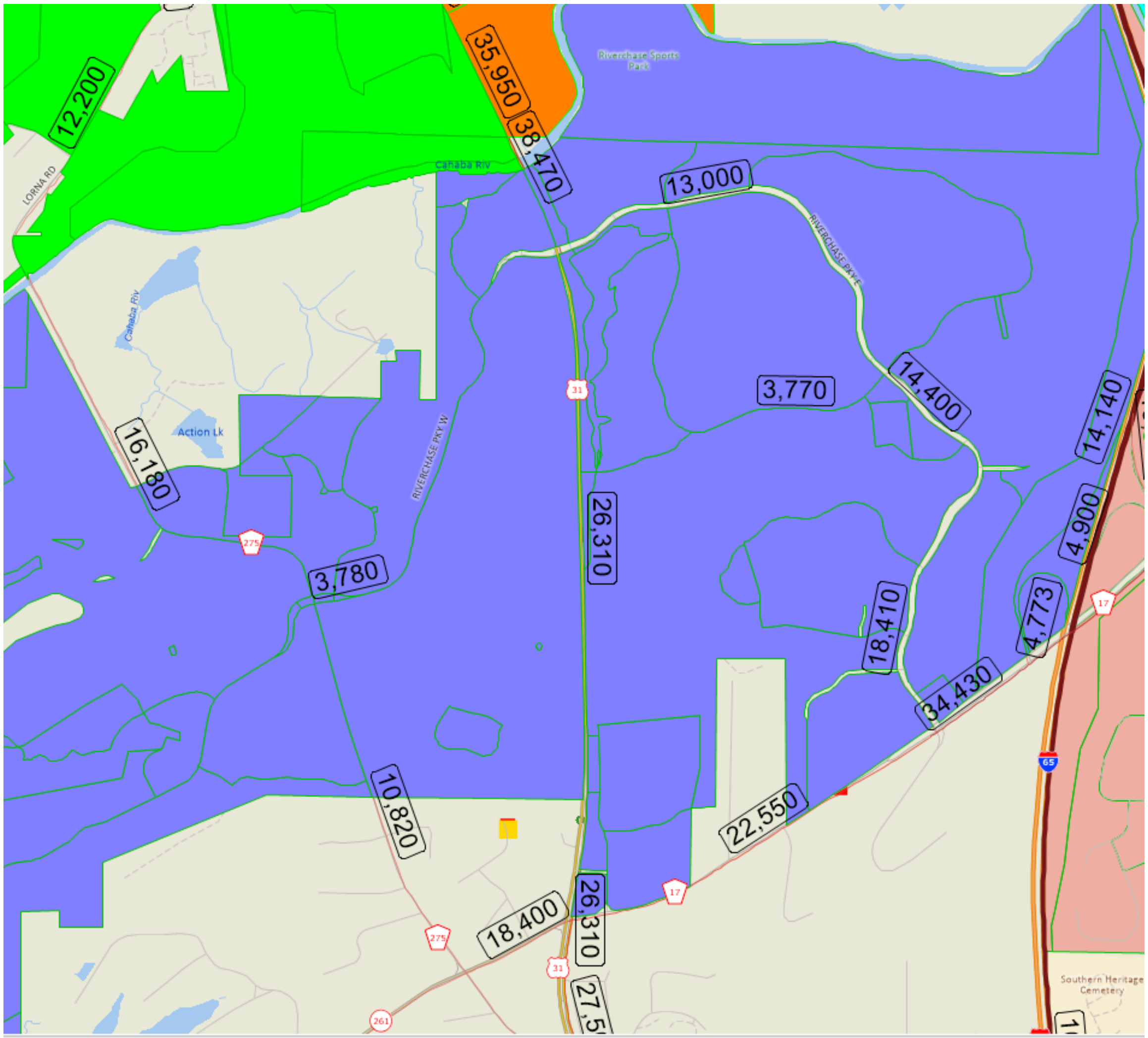
Ross Bridge Subarea



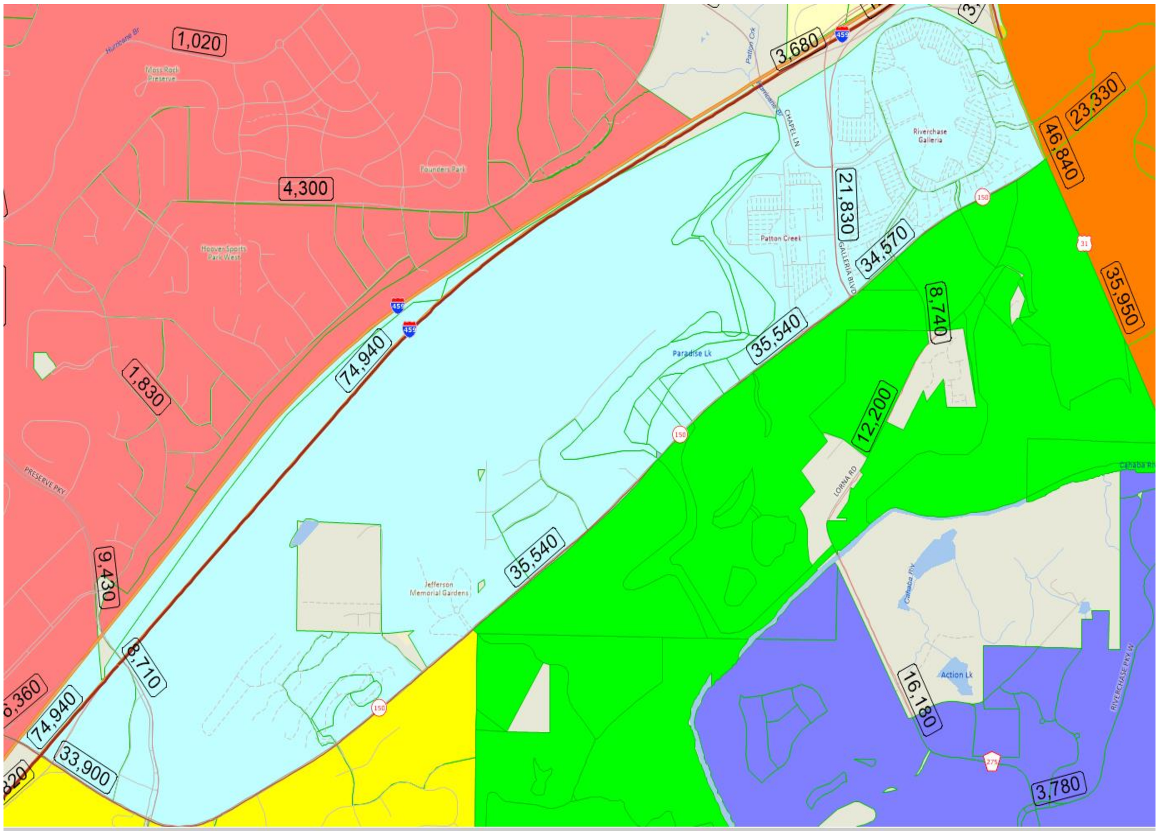
Preserve, Grove, Lake Cyrus, Deer Run Subarea



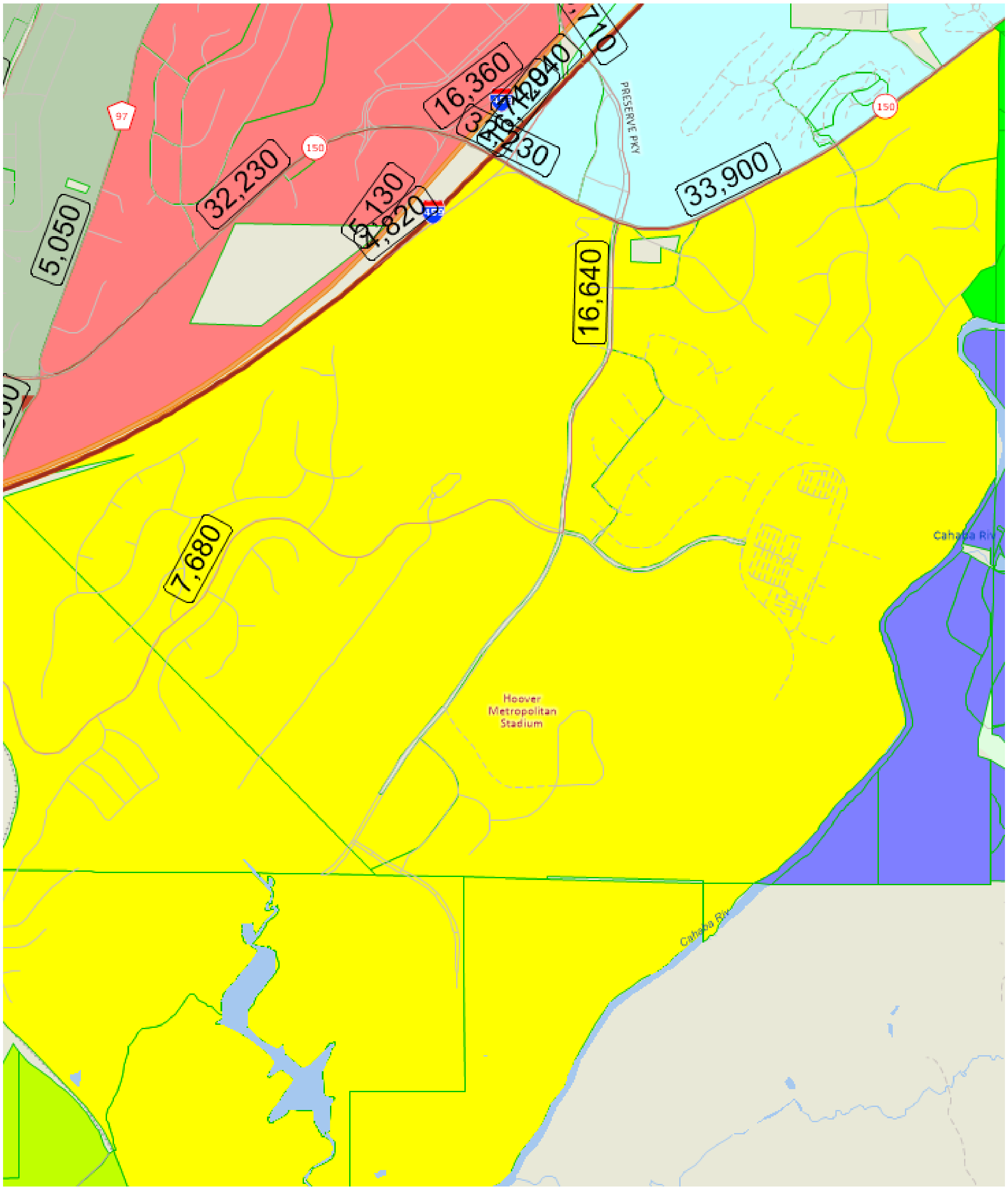
Riverchase and Acton Subarea



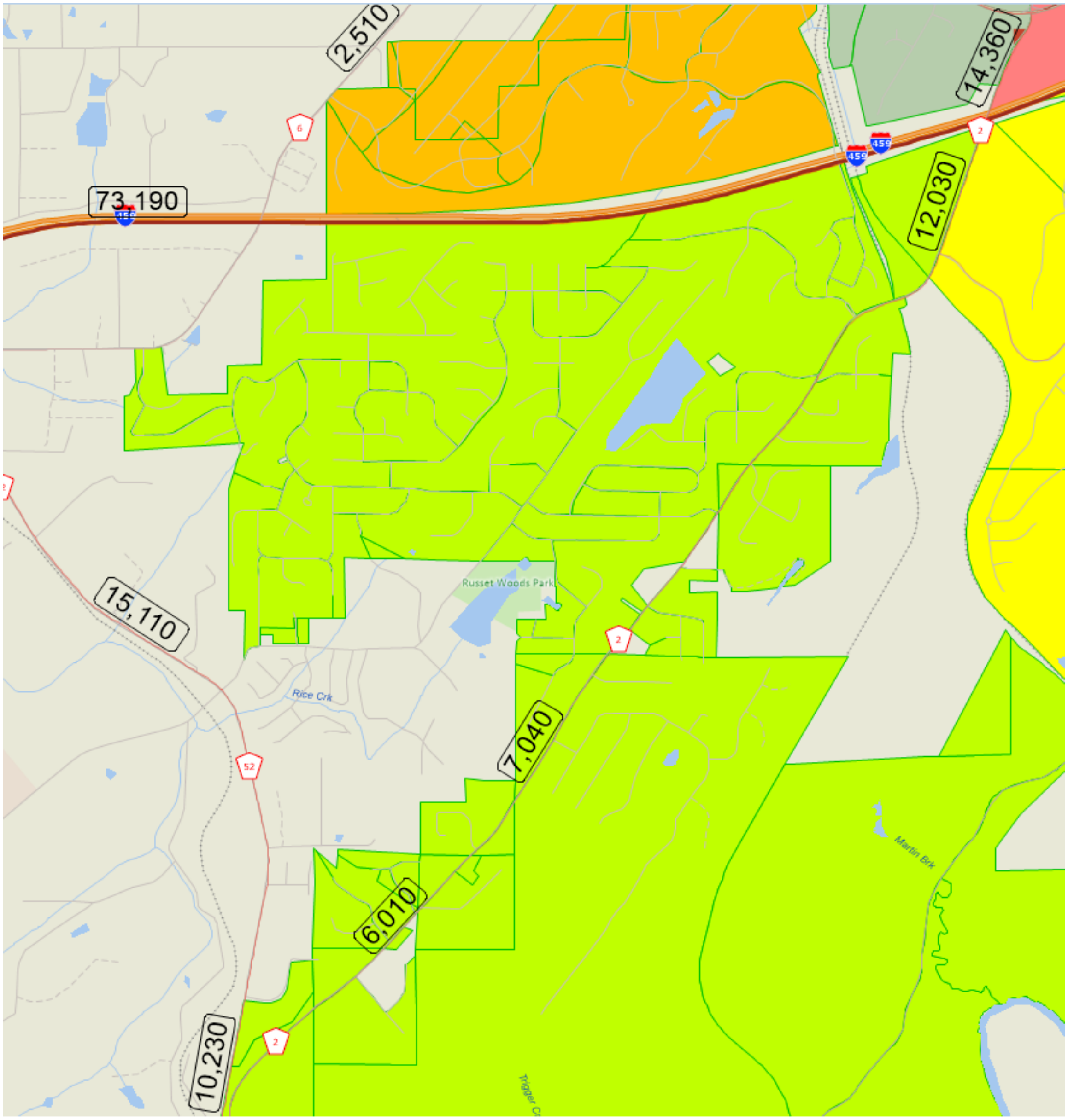
Chace Lake and US 150 Subarea



Trace Crossings Subarea



South Shades Crest Subarea



Threats and Opportunities for Hoover's Economy

Threats

According to dozens of sources, malls such as those that have provided Hoover with much of its tax base over the past thirty years are dinosaurs. Hundreds of malls and thousands of mall-based stores have shuttered in the past two decades, and many more may close in coming years. More than 6,400 store locations announced closures in 2017. In a 2017 report, analysts from Credit Suisse predicted that 20% to 25% of malls — about 220 to 275 shopping centers — would shutter over the next five years, largely because of store closures. Retailers such as Toys R Us, Best Buy and Sam's Club have all announced mass store closures, leaving the fate of many malls across the nation uncertain and landlords desperate to fill empty spaces. Millions of square feet of unoccupied mall space are up for grabs, including parking lot space.

Opportunities

Shopping centers are not dying. Bad shopping centers are dying. Shopping centers command two of the most important assets of the future: location and large parcel size. Dozens, perhaps hundreds of new innovative uses of shopping center space can take advantage of the locations and sizes of current shopping centers.

Below are selected suggestions and reflection from experts on innovative uses that have potential to bring new life to Hoover's shopping center spaces over the long term:

The Future of Shopping Centers

Renzo Piano, architect and engineer, Sunset Development Company
Source: Curbed, Feb 15, 2018, Malls and the Future of American Retail

> *Bad customer experience is out of fashion, not bricks and mortar.*
>
> *The mall of the future is architecturally ambitious, includes plants and water features, judiciously sprinkled with local retailers and food options, and surrounded not by a donut of surface parking lot but with housing, hotels, even educational facilities. There's an inherent sense of community when you live there, work there, and enjoy entertainment there.*
>
> *Consumers want new experiences, new surprises, a change of pace, and a change of atmosphere.*
>
> *Incorporating real public functions onto the quasi-public retail streetscape makes sense.*

McKinsey and Company, worldwide management consulting firm
McKinsey & Company, November 2014, The Future of the Shopping Mall

> *Although location remains the key real estate consideration for malls, a differentiated design and structure is increasingly important.*
>
> *It is critical that malls be about much more than stores. We see the mix of tenant/public space moving from the current 70/30 to 60/40, or even 50/50.*
>
> *Changing demographics, such as an aging population and increased urbanization, mean more people living in smaller spaces and a greater need for public spaces in which to socialize and congregate.*
>
> *In this environment, malls offer a welcome watering hole, especially in cities where other public spaces are not safe.*
>
> *Sustainability concerns are causing some consumers to prefer mixed use developments where they can live, shop and work all within walking distance.*
>
> *Mixed used developments offer consumers an attractive, integrated community in which to live, work and shop. They also serve to generate additional traffic for the malls while maximizing returns on invested capital.*

June Williamson, architecture professor - City College of New York and author of *Retrofitting Suburbia*
Source: Business Insider, Dec. 25, 2017, Here's what could happen to America's hundreds of dead malls

> *Malls of the future have an opportunity to fulfill other community needs besides commerce.*
>
> *Before: The department store*
>
> *After: Fitness centers, churches, medical clinics, and data centers*
>
> *Closed department stores will most likely become other businesses that could benefit from the large square footage, such as fitness centers, churches, offices, public libraries, and even medical clinics.*
>
> *The number of walk-in clinics in malls rose by 15% from 2011 to 2016, and a third of all urgent care clinics are now inside shopping centers, according to the Urgent Care Association of America.*
>
> *In 2007, the 100 Oaks Mall redeveloped one of its department stores into the Vanderbilt University Medical Center, which leased over half of 850,000-square-foot building. (The other half is still retail space.)*

In late 2016, the Milpitas Planning Commission in California also approved a plan to turn the abandoned department store in the Milpitas Town Center into a 24-hour gym.

Before: The food court

After: Art galleries and community gathering spaces

Since most food courts have significant amounts natural light, they could be used as gathering spaces for community groups or daycare centers if they closed down.

Some food courts, however, are redeveloping into clusters of higher-priced restaurants. Miami's Aventura Mall closed its food court to develop more restaurants and shops, which are expected to open this fall.

Before: The atrium

After: Car showrooms and event spaces

Mall atriums are wide open spaces that can allow for events like concerts or fashion shows, or serve as car showrooms — all of which generate revenue.

In 2000, the atrium at Penn-Can Mall in Syracuse, New York, turned into a car dealership called Driver's Village. Today, the only retail spaces in the mall are a café, a space for children's parties, an auto-accessory store, and insurance companies.

Toronto's largely abandoned Galleria Mall has come up with another clever use for its atrium: hosting dance parties. Vice reports that the mall periodically turns itself into a club called Shoppers Dance Mart.

Before: Shops

After: Apartments, art galleries, indoor farms, classrooms, and public libraries

Many dead retail spaces will most likely morph into businesses that have community functions, such as apartments, public libraries, indoor farms, and refrigerated spaces for processing food for local restaurants or grocery stores.

You'll find DMVs, town halls, and libraries in malls increasingly — the type of place where the public government can interact with the public. Some public spaces like libraries don't bring in much in rent, so they mainly serve as a way to attract people to the mall. If the mall owners can't keep the place fully leased, this at least keeps people coming who could keep the other lessees from fleeing. The Main Street was killed by *the mall, so developers are trying to build new downtowns inside the malls.*

In St. Louis, one large store in the Chesterfield Mall became the Children's Illustrated Art Museum and a puppet theater, while another in the CoolSprings Galleria in Franklin, Tennessee, turned into a gallery that showcases local artists.

The three-story Providence Arcade in Rhode Island — America's oldest mall — transformed most of its shops into 48 micro-apartments in 2016, with a hair salon and cafés still on the ground floor. Similarly, New York's White Plains Mall may be torn down and redeveloped into a 20-story residential tower within the next five years.

If a mall is being redeveloped into housing, most of the building usually will be demolished. Most malls have little plumbing and electrical capacity, which residential buildings demand.

Before: The parking lot

After: Housing, farmers markets, walking paths, and plazas

Malls may increasingly turn their surface parking lots into space that emphasizes walking rather than driving. In some ways, this would be a nod to the original intended use of a mall. The genealogy of the word 'mall' is a landscape term — a pedestrian space. But we've co-opted that term and linked it to retail."

In the coming years, many malls will downsize their amount of surface parking and turn it into public spaces that could benefit communities.

Everett Mall in Washington, for example, hosts a weekly farmers market in its parking lot. And in Seattle, Northgate devoted its two southern parking quadrants to a condo building for residents 55 and up. The Smith Haven Mall in Lake Grove, New York, holds a summer concert series in its parking lot every year.

Amanda Nicholson, professor of retail practice - Syracuse University
Source: CNBC.com, March 19, 2018, Malls can survive if they're converted into mixed-use centers

Converting malls into multi-service mini villages may be the key to using unoccupied real estate in the retail market

Integrate residential units, health clubs, grocery stores and upscale restaurants into malls to create more experiences. You don't have residential units in malls. Well, why not?

The fact is that people are still spending money on eating and going out and shopping. They want to socialize. They're still human. But they want *to do it in a way that is fundamentally different than what we were doing 40 years ago in a one-level mall with a smelly food court in the center.*

With the new model of consumption focusing on the experiential, retailers that provide consumers a way to "do more than just buy products are probably going to win this game."

Industry 4.0

As mentioned earlier, bad shopping centers are dying. However, the space currently devoted to shopping centers is incredibly valuable. As shown in the commentaries and analyses below, some of these spaces, as well as other locations in Hoover, can be transformed by focused and proactive economic development efforts into elements of what is predicted to be a massive sea-change in manufacturing and production that has been named The Fourth Industrial Revolution.

The Threat

Not devoting significant economic development efforts in recruiting, nurturing, and birthing these types of firms and allowing them to locate in other cities in the Birmingham-Hoover Metro Area or other cities nearby.

The Opportunity

Current and future Hoover residents will have the opportunity to get in on the ground floor of the most important industrial trend of the coming decades. Manufacturing and scientific research facilities of the future will be high-tech, smaller, smarter, and cleaner than ever before, and would be a prefect addition to Hoover given its educated population and room for expansion. Hoover's population currently drives significant distances to work. If Hoover can develop its own economy based on "Industry 4.0" businesses, a large number of current and future commuters could come to work within the city limits on a regular basis. In addition, manufacturing jobs generate a multiplier of economic impact (US Bureau of Economic Analysis) several times that of retail or services jobs.

Expert Insights

Klaus Schwab, Executive Chairman of the World Economic Forum

Source: The Fourth Industrial Revolution, January 11, 2016, Wikipedia

The Fourth Industrial Revolution (4IR) is the fourth major industrial era since the initial Industrial Revolution of the 18th century. The first industrial revolution occurred in the late 1700s, the second during the early 20th century, and the third after World War II. This new fourth wave is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. It is marked by emerging technology breakthroughs in a number of fields, including robotics, artificial intelligence, blockchain, nanotechnology, quantum *computing, biotechnology, The Internet of Things, 3D printing and autonomous vehicles.*

Klaus Schwab has associated Manufacturing's Fourth Wave with the "second machine age" in terms of the effects of digitization and artificial intelligence (AI) on the economy, but added a broader role for advances in biological technologies. It is disrupting almost every industry in every country. And the breadth and depth of these changes herald the transformation of entire systems of production, management, and governance.

Schwab sees as part of this revolution "emerging technology breakthroughs" in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3D printing, quantum computing and nanotechnology. The fourth wave of the industrial revolution is expected to see the heavy implementation of several emerging technologies with a high potential of disruptive effects.

Unlocking the potential of the Internet of Things

Source: McKinsey&Company, June, 2015

McKinsey estimates that the Internet of Things IoT) has a total potential economic impact of $3.9 trillion to $11.1 trillion a year by 2025. At the top end, that level of value—including the consumer surplus—would be equivalent to about 11 percent of the world economy.

The digitization of machines, vehicles, and other elements of the physical world is a powerful idea. Even at this early stage, the IoT is starting to have a real impact by changing how goods are made and distributed, how products are serviced and refined, and how doctors and patients manage health and wellness. But capturing the full potential of IoT applications will require innovation in technologies and business models, as well as investment in new capabilities and talent.

François Barbier, President of Global Operation, Flex, Inc.

Source: 5 trends for the future of manufacturing, Jun 22, 2017,World Economic Forum

<u>Smart Devices</u>: According to a recent report, the 237 million smart devices that have been in use since 2015 are expected to increase to 923 million by 2020, with manufacturers projected to spend $267 billion in the IoT by 2020.

<u>3D Printing</u>: Also making a mark in the manufacturing world is 3-D printing, which allows for the seamless creation of tangible products using a single machine. 3-D printing, also known as additive manufacturing, also offers many other benefits, including precision material placement, significant time and cost savings, and the ability to decentralize the manufacturing of basic parts.

Robotics: Automation is another vital aspect of the industry's future. The new generation of robotics is not only much easier to program, but is also more user-friendly than ever and, with such capabilities as voice or image recognition, can work with humans and re-create complex human tasks. New robots that are more agile, skilled, cheaper, and safer could decrease labor costs, bringing manufacturing processes back to the United States and other high-wage countries from Mexico and China.

Software and Services: Making Industry 4.0 work requires major shifts in organizational practices and structures. Designing useful algorithms and software that capture, process, interpret, and predict information is key to success in the digital manufacturing age. These include new forms of IT architecture and data management, new approaches to regulatory and tax compliance, new organizational structures, and most important—a new digitally oriented culture, which must embrace data analytics as a core enterprise capability."

Dana Mann, Adecco Group

Source: Top Manufacturing Trends and Challenges in 2018 and Beyond, Mar 11, 2018, Industry News & Trends

In 2017, manufacturing was on the rise, adding 138,000 jobs by December. Industry's total real output was near an all-time high for the previous three years. Overall, last year was a good year for manufacturing. With technology being the new focus in manufacturing, the question is not if but when majority of manufacturers will start using it. What can we expect in 2018 and in the years to follow?

Automation

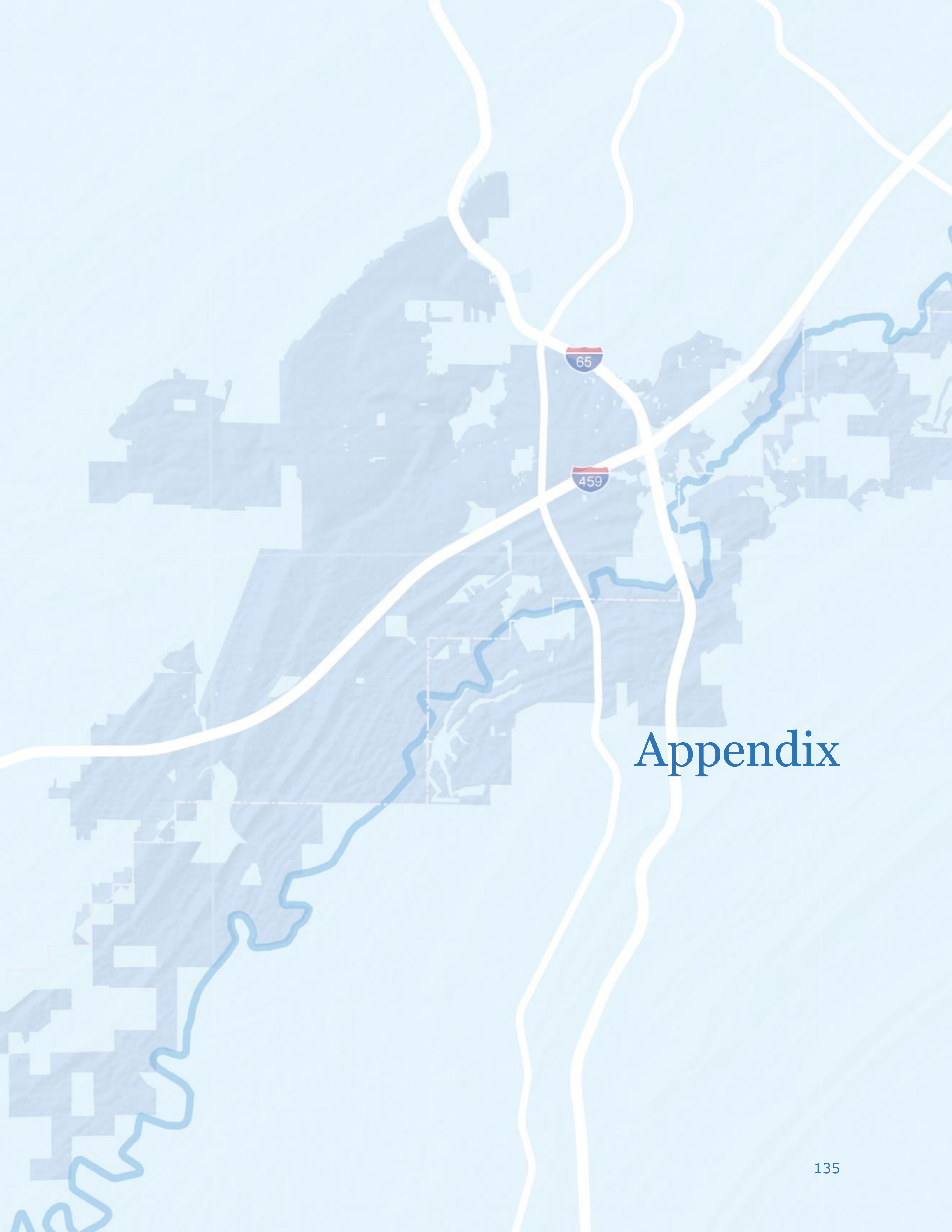
Robotics and automation have long been considered killers of manufacturing jobs. On one hand, robots will replace humans. In 2018, Forrester Research predicted that AI-enabled automation will eliminate 9% of US jobs. But on the other hand, they will also create millions of new job opportunities in the support of "automation economy." It will also create need for new skills.

Internet of Things (IoT) and Cloud Platforms

An analysis by Boston Consulting Group predicts that by 2020, companies will spend €250B ($267B) on IoT technologies, products, and services. Approximately 50% of IoT spending will be driven by industries with "less technology-centric companies," such as manufacturing, transportation and logistics, and utilities. With the huge amount of data manufacturing business are gathering, cloud based platforms enable processing them in real time. It can connect factories with new supply chains worldwide and allows faster response to demand, software planning and manufacturing systems.

Machine Learning in Manufacturing: Predictive Analytics Algorithms

Increasing numbers of manufacturers are starting to use predictive analytics algorithms. It helps with every aspect of the manufacturing process, such as efficiency, workforce productivity, or performance forecasts. To put it simply, predictive analytics algorithms are using available data to predict and to improve manufacturing operations and processes.



Appendix

Methodology for Calculating Population Change in Hoover Subareas

Hoover Analysis Areas as of 2010 Census

Hoover Area Grouping	Analysis Areas	2010 Census Housing Units	2010 Census Population
Greystone and 280	Greystone and Lee Branch	3,189	7,438
	Inverness and 280	1,268	2,055
Northeast	Altadena Woods and Caldwell Mill	1,197	2,966
North Central	Loch Haven Rocky Ridge Wisteria	3,545	7,314
Central	Woodmeadows and Old Rocky Ridge Rd	4,175	8,580
Southeast	Quail Run and Southlake	615	1,299
	Windover	357	1,078
Riverchase and Acton	Riverchase and Acton	3,145	6,970
Old Hoover North	Bluff Park	1,730	4,221
	Carisbrook	669	1,661
	Country Club Highlands	916	2,146
	Green Valley	1,550	3,634
	Shades Cliff and Camelot Woods	2,200	4,615
Northwest	Deer Valley	800	1,889
	Lake Cyrus	667	1,875
	Preserve and Grove Area	2,260	5,948
	Ross Bridge	743	1,886
One-Fifty	Chace Lake and 150	1,901	3,425
	Inside 150	894	1,698
Southwest	South Shades Crest	2,359	7,145
	Trace Crossings	1,064	3,074

Estimated Population By Analysis Area End-Of-Year 2017

Analysis Area	Housing Units 2010 Census	Population 2010 Census	Growth in Housing Units since 2010	Average Number of Persons per Household 2010 Census	Estimated Population Growth 2010 - 2017	Estimated Population 2017
Greystone and Lee Branch	3,189	7,438	57	2.29	131	7,569
Inverness and 280	1,268	2,055	63	1.61	101	2,156
Altadena Woods and Caldwell Mill	1,197	2,966	198	2.46	487	3,453
Loch Haven Rocky Ridge Wisteria	3,545	7,314	0	2.06	0	7,314
Woodmeadows and Old Rocky Ridge Road	4,175	8,580	0	2.05	0	8,580
Quail Run and Southlake	615	1,299	127	2.11	268	1,567
Windover	357	1,078	0	2.99	0	1,078
Riverchase and Acton	3,145	6,970	4	2.3	9	6,979
Bluff Park	1,730	4,221	0	2.44	0	4,221
Carisbrook	669	1,661	0	2.48	0	1,661
Country Club Highlands	916	2,146	0	2.34	0	2,146
Green Valley	1,550	3,634	7	2.34	17	3,651
Shades Cliff Camelot Woods	2,200	4,615	13	2.1	27	4,642
Deer Valley	800	1,889	50	2.36	118	2,007
Lake Cyrus	667	1,875	285	2.81	801	2,676
Preserve and Grove	2,260	5,948	366	2.63	963	6,911
Ross Bridge	743	1,886	1,227	2.54	3,115	5,001
Chace Lake and 150	1,901	3,425	166	1.8	299	3,724
Inside 150	894	1,698	15	1.9	28	1,726
South Shades Crest	2,359	7,145	72	3.02	217	7,362
Trace Crossings	1,064	3,074	208	2.89	601	3,675

Estimated Population By Analysis Area End-Of-Year 2017

Analysis Area	Housing Units 2010 Census	Population 2010 Census	Growth in Housing Units since 2010	Average Number of Persons per Household	Estimated Population Growth 2010 - 2017	Estimated Population 2017
Greystone and Lee Branch	3,189	7,438	57	2.29	131	7,569
Inverness and 280	1,268	2,055	63	1.61	101	2,156
Altadena Woods and Caldwell Mill	1,197	2,966	198	2.46	487	3,453
Loch Haven Rocky Ridge Wisteria	3,545	7,314	0	2.06	0	7,314
Woodmeadows and Old Rocky Ridge Road	4,175	8,580	0	2.05	0	8,580
Quail Run and Southlake	615	1,299	127	2.11	268	1,567
Windover	357	1,078	0	2.99	0	1,078
Riverchase and Acton	3,145	6,970	4	2.3	9	6,979
Bluff Park	1,730	4,221	0	2.44	0	4,221
Carisbrook	669	1,661	0	2.48	0	1,661
Country Club Highlands	916	2,146	0	2.34	0	2,146
Green Valley	1,550	3,634	7	2.34	17	3,651
Shades Cliff Camelot Woods	2,200	4,615	13	2.1	27	4,642
Deer Valley	800	1,889	50	2.36	118	2,007
Lake Cyrus	667	1,875	285	2.81	801	2,676
Preserve and Grove	2,260	5,948	366	2.63	963	6,911
Ross Bridge	743	1,886	1,227	2.54	3,115	5,001
Chace Lake and 150	1,901	3,425	166	1.8	299	3,724
Inside 150	894	1,698	15	1.9	28	1,726
South Shades Crest	2,359	7,145	72	3.02	217	7,362
Trace Crossings	1,064	3,074	208	2.89	601	3,675
	35959	81,619	2858		7182 (6,579)	87,496

(Assuming 91.65 % Occupancy; 91.65% occupancy is taken from the 2010 Census of Population and Housing)

~~HOOVER~~APPROVED AND BUILT RESIDENTIAL ~~GROWTH AND FORECAST BY ANALYSIS AREA~~DEVELOPMENT

End of Year 2017

		Approved	Built	Balance
Tyler-Alford Prd	Bluff Park	35	0	35
Chapel Creek	Carisbrooke	130	123	7
Bridgewater	Chace Lake Area	80	53	27
Chace Lake	Chase Lake	217	217	0
Mcgill	Deer Valley	108	50	58
Hidden Valley	Inside 150	957	0	957
Lakeview	Inside 150	230	130	100
Lake Cyrus	Lake Cyrus	1087	939	148
Heritage Park	Preserve And Grove	33	33	0
Grove	Preserve And Grove	97	95	2
Preserve	Preserve And Grove	725	412	313
Ross Bridge	Ross Bridge And Grove	2480	2257	113
Black Ridge Sig.	S Shades Crest	509	0	509
Black Ridge Rwds.	S Shades Crest	500	0	500
Woodlands Etc.	S Shades Crest	250	195	55
Southpointe Zettler	S Shades Crest	45	42	3
Uss-Hwy 52-Trigger	S Shades Crest	1944		1944
Woodhaven Trace	S Shades Crest	13	12	1
Trace Crossings	Trace Crossings	2068	1992	76
Tc Amendment 11	Trace Crossings			515
Wilborn	Trace Crossings	499	25	474
Total West Of I-65		**12522**	**6575**	**5837**
	Altadena Woods			
Caldwell Crossings	Caldwell Mill	535	532	3
Heatherwood	Caldwell Mill	95	89	6
Kirkman	Caldwell Mill	156	154	2
Brock Point	Greystone	97	25	72
Greystone	Greystone And Lee Branch	2935	2825	110
Inverness	Inverness And 280	1564	1150	414
Hunters Gate	Lee Branch	28	28	0
Hoover Ridge	Old Rocky Ridge Rd	330	0	330
Bent River	Windover	137	127	10
Total East of I-65		**5877**	**4930**	**617**
Total	**Total and grove**	**18399**	**11505**	**6784**

* Hoover Ridge re-evaluated

* Hidden Valley re-evaluated

Hoover Residential Growth And Forecast By Analysis Area

Analysis Area	Total Approved since 2006	Total Built by End-of-Year December 2017	Future Approved Housing Units past 2017
Greystone And Lee Branch	3,060	2,878	182
Inverness And 280	1,564	1,150	414
Altadena Woods and Caldwell Mill	786	775	11
Windover	137	127	10
Woodmeadows and Old Rocky Ridge Road	175		175
Bluff Park	35		35
Green Valley	130	123	7
Deer Valley	108	50	58
Lake Cyrus	1,087	939	148
Preserve And Grove	855	540	315
Ross Bridge	2,480	2,257	113
Chace Lake Area	297	270	27
Inside 150	1,187	130	*1,057
South Shades Crest	1,317	249	1,068
Trace Crossings	5,026	2,017	3,009
Total	18,244	11,505	6,629

Source: Hoover Housing Data, Permits versus Built as of EOY 2017
* will change